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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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REPORT ON THE NICARAGUA CANAL.

The department of State has published an abstract of the report of the Nicaragua Canal Commission, of which Admiral Walker is chairman. Acting under instructions to consider all routes heretofore proposed, having any appearance of merit, and any new routes which the commission might think advisable, the commission adopted the "Childs" route from Brito to Lake Nicaragua and the "Lull" route from the lake to Greytown. Concerning the route the report says: This line leaving Brito follows the left bank of the Rio Grande to near Bueno Retiro, crosses the western divide to the valley of the Lajas, which it follows to Lake Nicaragua. Crossing the lake to the head of the San Juan river it follows the upper river to near Boca San Carlos. Thence in excavation by the left bank of the river to the San Juanillo and across the low country to Greytown, passing to the northward of Lake Silico. It requires but a single dam with the regulating works at both ends of the summit level. The surveys have in general revealed better physical conditions than were hitherto supposed to exist, especially as to the amount of rock in the upper river, whereby it is possible to greatly reduce the estimated cost of construction." The commission estimates that the canal can be built across the isthmus at an expense not exceeding \$118,113,790. Col. Hains concurs generally with the views of the other members of the commission except on the estimate of the cost, which he places at \$134,818,308. The unit prices for excavation were assumed at the average prices actually paid to the contractors on the Chicago drainage canal, including cost of plants and contractors' profits, to which prices were added estimated differences due to location, climate, etc. The estimate for the cost of locks was based upon prices actually paid for the building of the government locks at Sault Ste. Marie, Mich., with 33 per cent. added for difference of location. The commission states that work on the surveys was much delayed by the revolutionary tactics of, and strained relations between, the government of Nicaragua and Costa Rica, and to some extent by the war between the United States and Spain.

SALVAGE CLAIMS.

Capt. John V. Tuttle, of Cleveland, representing the underwriters that carried the insurance on the steamer Arthur Orr, stranded last fall on the north shore of Lake Superior, left for Duluth a few days ago to make some depositions before admiralty lawyer, H. R. Spencer, Esq., in the case of the White Line Towing Co. against the

steamer. The depositions are in behalf of the owners of the Arthur Orr, Messrs. C. W. Elphicke & Co., of Chicago.

In this case the White Line Towing Co., Duluth, claims salvage to the amount of \$18,000, while the insurance people are willing to pay only regular day's wages for the release of the steamer and cargo. The towing company claims that it is a case of salvage, and this is denied by the underwriters. The towing company demands remuneration for the risk and extraordinary wear and tear of the fleet of tugs while wrecking the stranded steamer.

The Inman Tug Co., which assisted in taking the cargo from the Orr, has reached an agreement with the insurance people.

AN ACTUAL BID.

The proposals of the Navy Department inviting steel companies to bid on furnishing 24,000 tons of armor plate for the navy were replied to by only one firm—Burnstine Bros. of San Francisco. The figure named by this company was above the congressional limit and five years' time was requested in which to deliver the material. The bid was, of course, not acceptable, and the question of supplying the armor, a portion of which will soon be needed, will now devolve upon Congress for settlement.

NOT WORTH SALVING.

The former Spanish cruiser Reina Mercedes, recently arrived safely at the Norfolk navy yards. While she will be very desirable as a war trophy, she may not be a valuable addition to our navy, judging from the remarks that Rear-Admiral J. W. Philip is credited with making—"I do not think there will be any great disappointment felt in the navy at the announcement that the captured Spanish cruiser, Reina Mercedes, may not prove a serviceable vessel to the United States, for I believe there is a strong sentiment among our officers and men that vessels of foreign manufacture cannot do the work accomplished by warships of our own make. Some of the smaller vessels captured may prove serviceable to us in time of necessity.

THE NEW NAVY.

There are now building in the home ship yards forty-seven war vessels of the various types. Six battleships, three monitors, fifteen torpedo boats, thirteen torpedo boat destroyers, one submarine boat and one training ship are building at shipyards on the Atlantic coast, and two battleships, one monitor, one torpedo boat, and three destroyers on the Pacific coast. Three destroyers—the Whipple, the Worden and the Truxton—boats with a speed of thirty knots, are under construction at Sparrow's Point; one torpedo boat, the Tingey, and one submarine boat, the Plunger, are being built by the Columbian Iron Works. A cruiser is nearing completion at Newcastle-on-Tyne, England. This is a sister ship to the New Orleans, which was purchased from Brazil at the beginning of the war; Brazil would not sell the latter ship without the Almirante Abril, then just begun, and in order to get the New Orleans, the United States bought both. The new name of the Almirante Abril will be the Albany. Besides these ships now under construction, Congress has made appropriations for three battleships, three armored cruisers and six protected cruisers. The first six will have to wait for the next Congress to raise the limit of the cost of armor, as the Navy Department can not get armor at the limit named by the last Congress.

Of course, this sort of Navy costs money. The vessels mentioned above as being now under construction will cost, when completed, about \$50,000,000, and when they are placed in commission the United States will take its place among the maritime powers of the world.

THE ENGINES OF THE NEW PROTECTED CRUISERS.

The new protected cruisers, to be known as the Denver, Des Moines, Chattanooga, Galveston, Tacoma and Cleveland, will have a displacement of 3,200 tons each and a speed of 16½ knots. Their bunkers will have a coal capacity of 800 tons, giving a steam radius at maximum speed of 2,796 knots and a radius of 10 per hour of 6,925 knots. The hulls will be sheathed and coppered.

The engine will be of the vertical, triple expansion type, high pressure cylinder 18 inches, intermediate cylinder 28¾ inches, and two low pressure cylinders 35½ inches in diameter, the stroke of all pistons being 30 inches. The collective indicated horse-power of propelling and circulating pump engines will be about 4,500 when the main engines are making about 172 revolutions per minute, with a steam pressure of 275 pounds in the boilers, reduced to 250 pounds at high pressure cylinders. The main valves will be of the piston type for the high pressure and the intermediate pressure cylinders, and the low pressure cylinders will have slide valves, all worked by Stephenson link motions with double bar links. There will be one piston valve for each high pressure cylinder and two for each intermediate pressure cylinder, and one slide valve for each low pressure cylinder. Each main piston will have one piston rod, with a cross-head working on a slipper guide. The framing of the engines will consist of forged steel columns in front and back. The engine bed plates will be cast steel. The crank shaft for each engine will be forged in two pieces, the shaft for the forward low pressure and the high pressure cylinders forming one piece, and the intermediate pressure and the after low pressure cylinders forming the other piece. All crank, thrust and propeller shafting will be hollow. The shafts, piston rods, connecting rods, valve rods, eccentric rods and working parts generally will be forged nickel steel.

There will be a vertical, single-acting air pump work from the cross-head of the forward low pressure cylinder. The main circulating pumps will be of the centrifugal type, one for each main condenser. The two auxiliary condensers will have about 450 square feet of cooling surface each and will have combined air and circulating pumps.

The propellers will be rights and lefts of manganese bronze of approved equivalent material. They will turn from the ship.

There will be six water tube boilers, aggregating about 4,700 horse-power (200 of this will be used to run the auxiliary machinery), constructed for a working pressure of 275 pounds per square inch. The total grate surface will be at least 300 sq. ft. and the total heating surface about 13,200 sq. ft.

The forced draft system will consist of three blowers discharging into air-tight fire rooms. The air for combustion will be heated by the hot gasses circulating among or through tubes arranged in the uptakes or in the upper part of boiler casing, and will be conveyed through ducts fitted with dampers to closed ash pits.

VALUATION ON LAKE TONNAGE.

The valuation placed on vessels in the June supplement of the Inland Lloyd's, solely for insurance purposes, are as follows: Steamer Eureka, owned by W. A. Hawgood, of Cleveland, \$150,000; steamer M. A. Hanna, Captain John Mitchell, of Cleveland, \$260,000; steamer Henry W. Oliver, Capt. Thomas Wilson, Cleveland, \$260,000; steamer Pennsylvania, Minnesota Steamship Co., Cleveland, \$260,000. The steamer Elisha W. Strong, formerly the N. K. Fairbanks, but rebuilt and now owned by William Strong, of Tonawanda, N. Y., is rated A2 and valued at \$30,000.

NEWS AROUND THE LAKES.

CHICAGO.

Special Correspondence to The Marine Record.

Grain freights are firm this week at 2 cents on corn to Buffalo.

The steamer Briton docked this week in the Chicago Ship Building Co.'s dry dock, for repairs.

The Lake Carriers' Association shipping office at this port has been removed to No. 100 Van Buren Street.

The old whaling barge Progress lies in the slip of the Chicago and Calumet Dock Company at Chicago a total wreck.

The barge Chattanooga loaded at Bartlett, Frazier & Co.'s elevator, last week, 239,050 bushels of oats for Buffalo, at 1½ cents per bushel.

J. J. Rardon & Co. chartered the steamers Britannia, Rainey and Mecosta for corn to Buffalo at 2 cents, and the steamer W. P. Ketcham for corn to Midland at 1½ cents.

The Graham & Morton Company has decided to refuse all future offers for special excursions, and will depend on the regular passenger patronage to St. Joseph at a \$1 fare.

D. McIntyre, of Park Hill, Ont., Canada, a painter, who was working on the Manitou, fitting out at South Chicago, fell off a plank and was drowned, on Friday last. His body was recovered.

The L. M. & L. S. Trans. Co.'s steel passenger steamer Manitou will commence to run between this port and Mackinaw Island on the 22d inst. There is a big rush for bookings for the first trip.

At Barry's I. T. line floating dry dock, the tug A. B. Ward is receiving a new stern post and some calking. The steam yacht Hindu was in for bottom cleaning and painting, and the tug Rosaline for some new bottom plank and calking.

The Goodrich Transportation Co.'s steamer Virginia left here at 9 p. m. Monday night, for Milwaukee, on her first trip this season. President A. W. Goodrich and Manager H. W. Thorp, several guests, and a large number of passengers, made the trip.

The Union liner Starucca arrived here on Saturday from Buffalo with the most valuable and one of the largest cargoes of merchandise ever brought into this port. It consisted of 2,650 tons, and its value exceeded \$300,000. One lot consisted of 4,650 barrels of sugar.

The I. T. line tug Satisfaction sank in the river near Indiana Street, Monday night. She was tied up at the dock. The captain was the only person on board. He turned on the inspirator to let the steam run down, and then went to sleep in the pilot house, leaving the tug to sink.

Vessel agents incline to the belief that higher rates are being paid on ore from Escanaba than are given out at Cleveland, otherwise they cannot explain why some vessels are being sent out for ore after being offered grain cargoes at a higher freight than is given out. It has also been heard that 70 cents was being paid to Ohio ports and that rate to Tonawanda or Buffalo has been admitted.

The Graham & Morton Transportation Co.'s steamer City of Milwaukee made her first trip of the season between this port and St. Joseph and Benton Harbor on Monday morning. The company now have all three of their steamers running; they are bringing over large quantities of early Michigan fruit and merchandise also a goodly number of passengers. The excursion business will soon be in full swing.

The lights on the dome of the Masonic Temple at this port have been relighted for the season, but instead of being alternating groups of 3 red and 5 white lights, as in the past, they are all white incandescent electric lights (200 in number), placed in a horizontal line around the dome. They are lighted daily from 7 p. m. until midnight, Sundays and holidays included, regardless of the condition of the weather.

The sloop yacht Veva, challenger for the Canada cup, was launched at A. B. Cuthbert's yard at South Chicago, last Tuesday. This yacht is in the order of a racing freak. Her dimensions are 23½ feet on the water line, 49 feet over all, 6½ feet beam at the water line, 13 feet beam on deck, 7 feet draft of water, with a lead bulb on the bottom of her keel. She is to carry 1,750 square feet of canvas, and her racing length will be a fraction under 35 feet.

The Illinois Steel Co. has sent to the Hydrographic Office a list of steamers carrying iron ore to the company's mills. They are as follows: Maryland, Capt. J. E. Cox; Manchester, Capt. Tim Kelly; Pentland, Capt. Thomas McCambridge; Norwalk, Capt. Frank Goodwin; Clarence Black, Capt. William B. McGregor; Maricopa, Capt. Frank D. Root; Mariska, Capt. J. Bailey; Hadley, Capt. J. Fitzpatrick; Schlesinger, Capt. D. P. Crave; Manola, Capt. A. P. Chambers; Mariposa, Capt. H. Zealand; Lindsay, Capt. C. H. Woodford; Maude, Capt. W. J. Crowley; Ralph, Capt. Henry Leisk; Flower, Capt. F. W. Van Patten.

The small schooner-rigged boat Coke, about thirty feet long and only five tons' measurement, sailed for Manila from San Francisco, on Sunday last. Capt. Freitsche, of Milwaukee, Wis., the sole occupant of the little craft, proposes to make a tour of the world in the little vessel. He crossed the Atlantic in a vessel of even smaller dimensions.

DETROIT.

Special Correspondence to The Marine Record.

The steamer V. Swain is in dry dock at Milwaukee.

It is said to be an Erie man named Carter who has bought the wreck of the Tampa.

The underwriters are trying to sell the burned wreck of the wooden steamer Aurora, and it is said have almost completed a sale.

The owners of the tow barge B. W. Parker, which collided with the little steamer City of Mt. Clemens, have settled the damage claim for \$225.

The passenger steamers Greyhound and Pilgrim were dry docked this week, and received a thorough overhauling, ready for a brisk summer's work.

The wrecking tug Favorite, of the Swain Wrecking Co., stationed at Cheboygan, Mich., was telegraphed for on Monday to proceed to a point twelve miles west of Mackinaw, and to tow the disabled steamer E. H. Strong to Milwaukee.

The Jenks Shipbuilding Co. Port Huron has made a trust mortgage to the Union Trust Co. of Detroit for \$100,000, covering all their vessel property. The company are getting well in shape at their new plant and will build a steel steamer.

Word has been received from Capt. E. Dunn, commanding the Dominion cruiser Petrel, that the wreck of the schooner Groton, off Talbot Point and about eight miles west of Port Stanley, has been cleared away to a depth of twenty-five feet.

The United States light-house tender Marigold has recently placed a gas buoy, painted red, to mark the rocky shoal off Gross Cap, head of St. Mary's river, Michigan. Vessels passing in and out of the river will give the buoy a berth of about 200 feet, and should not attempt to pass to the eastward.

According to Capt. E. J. Burke, of the steamer Parks Foster, which ran aground just above the entrance to the St. Clair cut on Monday, a dangerous sand bar is forming within the cut. The Parks Foster was drawing 17 feet and there is supposed to be 18 and 19 feet of water in the cut, but soundings showed only 16 feet 8 inches.

The wreck of the steamer Harlem, stranded in Lake Superior, has been sold by the underwriters to the Thompson Towing Co., of Port Huron, for \$30,000. The Harlem went ashore last fall, but is said not to be much damaged by the winter's ice. She belonged to the Western Transit Line, and when stranded was worth about \$200,000.

The old steamer Flora, now owned by the Lake Erie & Detroit River railroad, has been almost completely rebuilt, and her name changed to the Urania. The steamer will be sent out from Walkerville for a trial trip. She will go on her regular route between Cleveland, Port Stanley and Rondeau about June 15. Bartlett and Tinker, River St., Cleveland, will be her freight and passenger agents at that port.

Robert W. Hunt, of Chicago, and Robert Logan, of Cleveland were in Bay City on Saturday last, for the purpose of appraising the Wheeler shipyard plant, prior to its admission as a part and parcel of the American Ship Building Co. It is stated that the yard is now added to the combine. It is understood the terms for the transfer of the Wheeler interests were satisfactory to all concerned, and that the yard will be kept in operation.

Edward T. Peck has resigned as superintendent of the upper yard of the Detroit Ship Building Co. Mr. Peck was with the old Detroit Drydock Co. twenty years, the greater part of that time as superintendent of the Springwells yard. There he superintended the construction of twenty of the strongest and best known wooden cargo steamers on the lakes, among them the Charles S. Parnell, W. J. Averill, John F. Eddy, Merrimac, R. P. Fitzgerald and Armour.

Capt. Francis Martin, of 159 First street, who was born on June 4, 1800, will celebrate his ninety-ninth birthday on Sunday. He is said to be the oldest man now living who witnessed the burial of Napoleon Bonaparte at St. Helena. Then he was 21 years old and second mate of the sailing vessel Purington, which put into St. Helena for water. Five years later he entered the United States marine service, receiving his commission from Andrew Jackson, and was stationed at Charleston, S. C., during the exciting nullification times.

Referring to an item in the Detroit column last week, Mr. D. E. Rice says: "My scheme for cutting ice does not include 'crushing screws.' My idea is to cut the ice the width of the boat and then let the steamer run on it pushing it down and under the solid ice in large cakes. There would be no, what you might call, crushed or slush ice. If the channel was cut the width of the boat the ice in coming up would have to lodge under a field of ice, thus leaving a comparatively clear channel." This appears to be a very sensible and practicable method of opening a channel in ice.

B. W. Parker, administrator of the estate of Barney Wilds, transferred the steamer St. Paul to a company consisting of Joe King, Irving W. Green, Capt. William McKay, John S. Quinn and William S. Eldridge, the first two of whom are connected with Parker & Millen's office. The consideration is private. The St. Paul will be put in first-class shape for the coal and ore trade. She will also be given new boilers. The St. Paul was built in 1868, but within the past seven years more than \$47,500 has been expended on her. She has been out of commission for three years, and is now lying at the foot of McDougall avenue.

BUFFALO.

Special Correspondence to The Marine Record.

While there can be no doubt but that the recent strike was the means of delaying traffic at this port we have seemed to pick up for it since and everything is now moving brisk enough to suit all parties.

All records for fast elevating were broken at the Great Northern elevator at Buffalo last Friday. The propeller Neosho tied up at the Great Northern Friday morning with 105,000 bushels of barley in her hold. Just 3 hours and 40 minutes afterwards she cleared light.

The work of extending the breakwater goes on rapidly, and the contractors expect to accomplish much before the storms of fall set in to prevent the continuation of the work. Major Symons, Corps of Engineers, U. S. A., is indefatigable in his efforts toward advancing the improvements.

The Cleveland and Buffalo line boats will run excursions this season from here to Dunkirk and probably make that place a regular port of call. The officers of the line inspected the dock facilities at Dunkirk this week and appeared satisfied that they could make suitable arrangements for a regular service. There seems to be no reason why the fine powerful boats that the C. & B. line now have couldn't make three or four landings between this port and Cleveland. It was short-sighted enough or they might have kept the Erie trade and then there would have been no need to make the Pennsylvania for the Erie-Buffalo route.

A rumor has drifted here this week from Chicago, that the Northern Steamship Co. would extend its route to Chicago, providing dockage could be secured. The schedule was mapped out, for the North Land to keep in the Buffalo-Duluth trade, and the North West Buffalo-Chicago. The report made a flurry among the Lake Michigan passenger lines, but it is so far groundless. It is certain, however, that the miniature Atlantic liners North West and North Land ought to have a longer and more lucrative term of service than the Duluth business offers them, as they are too expensive craft to lie idle two-thirds of the year. The Goodrich Line bought off the Columbus, but it is very questionable if they would ever think of taking over the North West, or not even a combination of all the steamboat passenger lines out of Chicago would put up money to purchase her. However, at the offices of the Northern Steamship Co. it was said that there is no truth in the rumors. The Northern Steamship Company opens the season this month with its two steamers, the North West and North Land, which are noted for their speed and elegance of equipment.

ESCANABA.

Special Correspondence to The Marine Record.

The schooner Clint arrived in port in a leaky condition, and it took over a day to locate the leak.

The weather conditions for the week have been unsettled, with frequent rains and high winds, mostly from the south, also frequent fogs.

The Goodrich Co. began running steamers to this port on the regular summer schedule June 5th. The Hart Line schedule going into effect June 15th.

The Hart Steamboat Line, of Green Bay, have chartered their steamer C. W. Moore to a company operating the Chicago-Kenosha Line. She left for Chicago June 6th.

The carrying of iron ore on the car ferry barges, must be proving a success, as the big steel tug S. M. Fisher has been assigned the duty of towing three of the barges between here and South Chicago, while the tug Crosby will tow the remaining barge between Peshtigo and South Chicago.

Freight and passenger steamers making this port report an enormous business, with no signs of a let up. Business in the ore trade is in a lively condition, rates at 70 cents, with signs of even an increase. Coal arrivals are not very numerous but enough are coming in to supply the demands at present.

David McKinney, one of the crew of the steamer David Rust, fell overboard and was drowned last week at No. 5 dock. McKinney had just shipped on the Rust that day, having been employed around this city for a number of years. When the body was recovered an ugly wound was found on the forehead which led some to believe he had been struck by some one.

The new swing bridge over the Canadian canal at Sault St. Marie, of which the superstructure is 408 feet long, is the longest swing bridge in Canada. It was built in place without any interruption of railway traffic. The new bridge does away with the objectionable pier which stood in the center of the canal as a menace to shipping, and which is now being taken out, so that this season vesselmen using the Canadian lock will have an entrance 150 feet wide.

THE search for the hull of the lost tug Palmer has resulted in turning up the remains of the steamer Zealand, lost twenty years ago. Although a great deal of searching was done for the Zealand, no trace was ever found of her before. She carried a valuable cargo, and when she went down all of the crew perished. The Donnelly Wrecking & Salvage Co., Kingston, which found the wreck of the Zealand, will make an investigation to ascertain whether any part of the cargo can be recovered profitably. The Zealand sunk near Nicholson's Island, in Lake Ontario.

CLEVELAND.

Special Correspondence to The Marine Record.

The six steamers of the Lake Superior Iron Co. will hereafter be managed by Edwin Mills of the Carnegie Steel Co.

Capt. John Wysoon is now in command of the Bradley steamer Pasadena. He took the Alva around a couple of trips.

The C. & B. line will run excursions this year the same as last, and every facility with attention and courteous treatment will be shown to the traveling public.

Senator M. A. Hanna, also Mr. Samuel Mather, of Messrs. Pickands, Mather & Co. will be out of the city for some time. Mr. Mather left for Europe this week and the Senator sails on the 14th inst.

The Queen City is undergoing extensive damage repairs at the yards of her builders in Lorain. It is estimated that the repair bill, new work and some changes will call for an outlay of about \$8,000.

It will take another week to complete repairs on the steamer Alva, which was placed in the Cleveland dry dock Monday. Forty-nine plates will have to come off, and she has a large number of damaged frames. She struck at Detroit.

The steamer William Chisholm will hereafter be managed by Capt. William Gerlach, of the Minch and Nicholas Transit Co. W. C. Richardson will have charge of the steamer J. H. Devereux. Stockholders in the two steamers have exchanged their interests.

A survey was held this week on the steel steamer Griffin, after her collision with the Wawatam at Point Iroquois and temporary repairs at the "Soo." Mr. Robert Logan and Mr. Watterson were the surveyors. The vessel will be dry-docked at Lorain for final repairs.

Mr. L. L. Malm, the Arcade, is consul at this port for Norway and Sweden. Mr. Secher, Case building, represents Denmark as consul. As a majority of the sailors on the lakes are Scandinavians, they would do well to make a note of their national representatives at this port and their respective addresses.

Nothing further has been done, nor is any information obtainable here about the masters and mates of 700-ton vessels being licensed. A local journal seemed to know all about this feature a little while ago and was somewhat imperative regarding its knowledge on the subject. Perhaps it knows a little less about it now?

The Chase Machine Co. are making a specialty of mooring winches. These small machines are in use when mooring with flexible steel wire ropes. Twenty-eight of them have already been placed on the largest class of tonnage and orders are still booked ahead. The shops have also been kept busy on new and marine repair work.

The barge Troy, which broke away from her towing steamer, the Harvey Kendall, on Lake Michigan, Sunday night, has been heard from. Her captain, J. C. Nelson, reported to Mr. John F. Wedow, the owner, from Milwaukee, saying that the barge had reached that port. Mr. Wedow was quite anxious about the float, from the fact that his son is mate on board.

With an advance of \$5 per ton on structural iron, also of all forms, it is easy to see why the several contracts for new tonnage ready to be placed are not given to the ship-builders; however, each yard has enough work in hand to keep its force well employed for some time yet. As regards the prices on iron material, \$20 per ton is mentioned as the present figures, although since 1892 \$17 has been the ruling rate.

Many of the oldest experienced vessel masters will be pleased to learn of the appointment of Capt. Orville Green to the steamer Iroquois, vice Capt. Thomas Jones, who has resigned to accept a position ashore in the employ of Mr. M. A. Bradley. Capt. Green superintended the construction and sailed the steel steamer Griffin for several years. The Griffin was so carefully handled and well kept up that she looked like a brand new boat each succeeding year and she is only now undergoing her first heavy damage repairs.

There have been more accidents this season through men falling in the holds of vessels than ever before and it looks as if there was considerable carelessness somewhere. On Monday there were two of such cases, one of which is likely to prove fatal. The larger vessel owners can, and do, insure against any claims arising from such accidents. Those who are not insured should see that all the usual precautions are taken when the hatchways are open and unprotected, especially should this feature be attended to by the people who do, or intend doing the falling.

The tug Sweepstakes, of the Boutelle Towing Co., left this port on Sunday night for the Atlantic coast, where she will do towing on a larger scale than she has been accustomed to on the lakes. While she may have larger boats to handle, she will not have as much business to care for at the coast ports as she has had here on the lakes. When the Sweepstakes left the harbor she was given a farewell salute of several whistles by the other tugs lined up along the river. As a matter of fact, and record, they seemed to keep up the din for about half an hour, apparently on the principle that a steamboatman likes to hear his own whistle and next to that, some other fellow's. However, she was given a good send-off, whatever her future on the coast may be. One thing is certain, and that is she will have heavier weather to contend with than she has had on the lakes.

The many friends of Mr. Wm. M. Fitch, secretary of the Cleveland Ship Building Co., will be pleased to learn that he has almost recovered from the injuries inflicted through his recent accident or collision with the street cars. Mr. Fitch has not taken up his regular office work as yet, but he is on deck regularly and every one admits that he has stood a very serious siege in a wonderful manner. A splendid constitution, physical fitness and a determination to keep to windward has pulled Mr. Fitch through all right, lacking these attributes any other man would have gone under.

Coal shippers are rather pleased than otherwise to learn that iron ore shipments to June 1st were ahead of last year and they argue that as soon as there is enough ore ahead any old rate that they like to offer will be taken on coal charters. Of course vessels want to be well ballasted towards the fall, and even the large iron and steel craft want more than water ballast; but coal shippers are away off if they calculate on doing a season's shipments in the fall months. The opinion is quite prevalent that 50 cents to Lake Michigan and 40 cents to Lake Superior ought to be the present figures from Ohio ports.

At the naval shipping office in the Federal building, forty-three men had been enrolled from Friday last up to Wednesday noon, when the office closed for a half holiday. The instructions are that as high as sixty men may be shipped at Cleveland. The men are to be sent to San Francisco, where they will go aboard the training or drill ship Hartford for a cruise around the world, lasting about a year and a half. The majority of the forty-three men who have signed the articles of war are from Cleveland and average from eighteen to twenty-three years of age, the majority having German names. Lieut. Hines, the shipping officer, expects to leave for St. Louis on Saturday.

The freight handlers at the docks of the D. & C. Nav. Co. considered that \$2.00 per day was about what their labor was worth instead of \$1.50 and on Monday morning quit work. Mr. D. C. McIntyre, G. F. & P. A. got the men together, talked the difference over and compromised by mutual agreement at \$1.75 per day. Unless the limit is being paid, or a firm is unalterably opposed to any increase, the tactics pursued by Mr. McIntyre may generally be considered as the best all round. In this case work only ceased for a couple of hours and both sides were amenable to reason, also good, sound horse sense. There is a twang of the Scotch about the D. & C. Line in more ways than one, but Mr. McIntyre indulged in no "Scotch navigation" in resuming work on the dock.

If a vessel becomes detained at a loading or discharging port over and above the ordinary lay days, she is usually entitled to collect demurrage for the detention. Detained and detention seems to imply being held back or down, moored, as it were. The Iron Trade Review gets at it in this way: "Vessels are getting better dispatch at Lake Erie ports than was the case a year ago. More ore is going direct and the ore that goes on dock is being promptly handled, so that there is comparatively little holding up of vessels." There are various ways of holding up and the phrase itself smacks a little of the ordinary, also the parlance indulged in by the supposedly wild and woolly west, as for instance, "hands up," well! all I have to say is, the Lord pity the hands that are asked to hold up the iron ore drogers on the lakes. By the way, the Western Reserve, or let's say Northern Ohio, is quite within the Eastern limits of the Western Hemisphere, therefore, eligible to use the Boston elegancies of diction rather than intrench upon the vocabulary of the Westerners' pure dialect.

BRITISH MERCHANT CRUISER SUBSIDIES.

The following are the British-reserve merchant cruisers and the subsidies they receive from the British government:

COMPANY AND VESSEL.	Amount.
Cunard Line :	
Campania	\$36,498.75
Lucania	36,498.75
Peninsular and Oriental Co.:	
Himalaya.....	16,424.44
Australia.....	16,424.44
Victoria.....	11,864.52
Arcadia.....	11,864.52
White Star Line :	
Teutonic	35,355.13
Majestic	35,992.63
Canadian Pacific Co.:	
Empress of India	
Empress of China	
Empress of Japan	
Total	\$236,511.90

Capt. George A. Gaylord has tendered his resignation as keeper of the Long Tail Point lighthouse in Green Bay after nineteen years of continuous and efficient service. Capt. Gaylord's resignation was forced by a fatal malady in the form of a cancerous growth on the lower part of his face. His demise is close at hand, and he fully realizes the fact. Capt. Gaylord was for many years master of steamers plying between Green Bay and Buffalo.

FLOTSAM, JETSAM AND LAGAN.

The hull of the burned steamer Dove was destroyed by the use of dynamite, this week, at Toledo.

Capt. B. F. Cameron, of the Kenosha life saving station, Thursday received a silver medal from President McKinley.

The steamer Arthur Orr, wrecked near Baptism river, Lake Superior, last November, and lengthened and repaired at Superior, is about ready for business. Capt. J. V. Tuttle says she is better than when new, as she has been generally strengthened.

The largest load of ore yet cleared from Two Harbors was that of the Bessemer tow barge, John Fritz, last week—6,800 gross or 7,617 net tons on a draft of 17 feet 2 inches forward, and 17 feet 3 inches aft. The S. F. B. Morse, which towed the Fritz, carried over 6,000 tons.

The Goodrich iron mine, four miles south of Ishpeming, has been bought by A. B. Miner and is to be reopened and worked extensively. The mine has been idle seventeen years. The demand for iron ore is greater than the supply, and scores of old mines idle for ten or twenty-five years are being reopened or looked over carefully with a view to speedy resumption of mining.

The steamer Sarah E. Shelden of the Br dley fleet reached Duluth Saturday with her smokestack down. The funnel shrouds that held the stack in place were carried away as a result of the pitching and rolling of the steamer in a blow on Lake Superior. There is a patent spring for steamers' smokestack guys, and they have been found of great use where a vessel works much, as also in heavy weather.

Here's the way the revenue stamp strikes a Kansas editor: "I've liked a dozen stamps today for telegrams I've sent; I licked and stuck one on a bill with which I paid my rent; I licked a stamp to paste on a note which I renewed, and then I licked another one to make the mortgage good. I've licked these stamps to show that I respect my country's will, and now I'd like to lick the man that introduced the bill.—Houston Herald.

The tugmen on strike at Duluth are keeping the harbor clear and handling all vessels that come along almost as well as ever. Singer and Inman their former bosses and managers of the two fleets are simply ignored until they make up their minds to treat their men better than they have been doing. If Capt. James Davidson, or Ben Boutelle would only charter a few tugs to the tugmen for the season, vessels would be given better service and probably at lower rates than they have been paying heretofore. There is no reason for two men to be pulling out thousands of dollars on the earnings of a few tugboat crews.

The sensation of an earthquake at sea is startling. The ship is shocked from stem to stern, and the first impression is that she has struck a rock. On a railway train in motion the sensation is that the wheels have run over a fair-sized stone, for it is a severe jolt. In the lofty modern office building the affrighted tenant fancies the edifice is swaying back to and fro over the periphery of about half a block, when in reality the oscillation is confined to a few inches, except in severe cases. The effect produced on the human system is never twice the same. The man who smiles at the shock today becomes terrified on some other occasion.

The famous Atlantic steamer Alaska has been sold for a comparatively small sum for breaking up purposes. Only eighteen years ago this vessel was launched, and early in the following year she became prominent by gaining the record and making the fastest passage. She earned for herself the title of the "Atlantic Greyhound," and was the first vessel to reduce the passage across the Atlantic to under seven days. Since that time she has performed good service, and was for many years a favorite with Atlantic passengers. For some considerable time, however, she has been lying idle in the Clyde, and now she has passed into the hands of the breakers-up. As yet there has never been a metal vessel built for lake service that has been relegated to the "bone-yard," or sold for breaking-up purposes. We will, no doubt, have to come to it later though, notwithstanding that fresh water is much easier on metal hulls than is salt water.

BRITISH SHIP BUILDING.

The total mercantile-marine shipbuilding output of 1898 for the whole world is estimated at 1,893,000 tons, and Lloyd's returns show that of this total output, 1,367,570 tons gross were launched in the United Kingdom, the number of vessels being 761, of which only 17 were sailing vessels. In addition, last year, there were 41 warships launched in the United Kingdom, of 191,555 tons displacement. The total output of the United Kingdom for 1898 was, therefore, 802 vessels, of 1,559,125 tons. Not counting warships, there were at the close of the year 584 vessels, of 1,401,087 tons gross under construction, in the United Kingdom. The corresponding figures at the close of 1897 were 505 vessels of 1,013,319 tons. Lloyd's returns give the addition of steam tonnage to British registry during 1898 as 1,111,768 tons gross; and of sailing tonnage, 29,053 tons; total, 1,140,821 tons.

Large as was last year's business in shipbuilding in British yards, this year's is expected to be larger. Of the launchings last year, 1,131,000 tons were under Lloyd's survey; while early in January this year, there were 1,186,000 tons of vessels being constructed under Lloyd's survey.

Of the new orders, a number of the largest ships will be for the trans-Atlantic trade, with Liverpool as the British port. There are also a number of ambitious projects for the British-Canadian trade.

THE MARINE RECORD.

SHIPPING AND MARINE JUDICIAL DECISIONS.

(COLLABORATED SPECIALLY FOR THE MARINE RECORD.)

Maritime Liens—Nature of Vessel—Barge.—A barge, though without means of self-propulsion, is subject to a maritime lien for breach of a contract of hiring to the same extent as any other vessel. The New York, 93 Fed. Rep. (U. S.) 495.

Signals by Tow—New Rules.—A tow of canal boats is not required to signal in a fog. If any signal is required from it as a matter of prudence, it belongs to the tug to see that it is given. Hughes vs. Pennsylvania R. Co. et al., 93 Fed. Rep. (U. S.) 510.

Shipping—Chartering of Vessel—Implied Warranty of Seaworthiness.—Where a vessel is chartered or let, there is an implied warranty on the part of the owner that it is seaworthy, and sufficient for the use to which it is to be devoted. The New York, 93 Fed. Rep. (U. S.) 495.

Construction of Bill of Lading—Measure of Damages for Injury to Cargo.—A stipulation in a bill of lading limiting the liability of the vessel to the invoice or declared value of the goods does not authorize the carrier to deduct the freight from such value in case of loss or damage. The Styria, 93 Fed. Rep. (U. S.) 474.

Admiralty—Charter Party—Breach.—A charter party for the transportation of lumber entirely by boat from the port of shipment to that of destination, is a maritime contract, and therefore the United States district court has jurisdiction of an action in personam in admiralty for its breach. Dunbar vs. Weston, 93 Fed. Rep. (U. S.) 472.

Injury to Cargo—Right of Charterer to Enforce Provisions.—A charterer, as carrier, is so far the representative of the owner of the cargo that he may sue in his own name for an injury thereto, and may maintain an action in rem for such injury against the carrying ship where the cargo owner could do so. The New York, 93 Fed. Rep. (U. S.) 495.

Admiralty Jurisdiction—Maritime Contract.—An action for damage growing out of the breach of a contract for the hiring of a barge by reason of its unseaworthiness, which caused injury to the cargo while the barge was at sea on a voyage, is based upon a maritime contract, and is within the jurisdiction of a court of admiralty. The New York, 93 Fed. Rep. (U. S.) 495.

Collision—Vessel Overtaking Aft—Converging Courses.—A tug, while proceeding down North river on a course of $1\frac{1}{4}$ points east of a course straight down stream at the rate of six knots per hour, was struck and capsized by a steamer proceeding straight down the river from behind, going at a speed of 12 knots. No signals were given by the steamer until she was but 800 feet astern of the tug, when she blew two whistles, but these were neither heard nor answered by the tug. The steamer made no change in her wheel until she was so near the tug that a collision was imminent. Held, that the tug under the rules then existing was under no obligation to notice or to answer the steamer's whistle astern, and that the latter was responsible for the collision in attempting to pass so near in view of the converging courses of the two vessels. The Magenta, 93 Fed. Rep. (U. S.) 254.

Admiralty Pleading—Sufficiency of Libel.—While the burden rests upon a libellant—alleging in a suit against a ship, that he was injured through the inexperience and incompetence of a man who was operating a steam winch, to which duty he was assigned by the master—to prove that the master failed to exercise proper care and diligence to ascertain the qualifications of the man for the work, or failed to remove him after his incompetency was known to some officer of the ship, an allegation in the libel that the master relieved a competent man from the work, and put in his place an ordinary laborer, who was unacquainted with the operation of the winch, and who was not even connected with the ship, is a sufficient allegation of negligence on the part of the master, where the libel was not excepted to, and was met by an allegation in the answer that the man was competent. The Anaces, 93 Fed. Rep. (U. S.) 240.

Negligence of Officers in Navigation of Vessel.—The Longfellow, a large river steamer, was starting on a trip from Cincinnati to New Orleans, carrying passengers and a valuable cargo. She had pilots on board, and was assisted by a tug. While the smoke stacks were lowered to permit her passage under the suspension bridge at Cincinnati, as was frequently the case, the pilot house became so filled with smoke that the pilot could not see to navigate the vessel past the railroad bridge below, but she continued at full speed; and, her side striking one of the piers, she was broken in two by the current and sunk, some of her passengers being drowned and her cargo lost. The river was high and the current strong. No effort to stop the vessel was made until too late to avoid the collision. No arrangement appeared to have been made with the tug to secure efficient aid in the management and handling of the vessel. Held, under the facts shown, that the disaster was due to negligence of the officers and pilots, in failing to make such arrangements, and in not stopping and backing at once when the smoke so obscured their vision as to make the attempt to pass the lower bridge at that time unsafe. Memphis & C. Packet Co. vs. Overman Carriage Co. et al., 93 Fed. Rep. (U. S.) 246.

SUN'S AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation. A second bearing may be taken by compass at sunset, by reversing the east bearing, given for the nearest latitude, as the change in declination for a few hours makes but a slight difference in the true bearing of the Sun's setting. The bearing may be taken when the sun's center is on the horizon, rising or setting. The three elements which may be obtained by taking these amplitudes are the quantities known as local attraction, variation and deviation.

LAKE ERIE AND S. END LAKE MICHIGAN, LAT. 42° N.

Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.

June 9 E. 31° N. = N. 5 $\frac{1}{4}$ E. = N. E. by E. $\frac{1}{4}$ E.June 12 E. 31° N. = N. 5 $\frac{1}{4}$ E. = N. E. by E. $\frac{1}{4}$ E.June 16 E. 32° N. = N. 5 $\frac{1}{2}$ E. = N. E. by E. $\frac{1}{8}$ E.LAKE ONTARIO, S. END HURON AND CENTRAL PORTION
LAKE MICHIGAN, LAT. 44° N.

Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.

June 9 E. 32° N. = N. 5 $\frac{1}{2}$ E. = N. E. by E. $\frac{1}{8}$ E.June 12 E. 32° N. = N. 5 $\frac{1}{2}$ E. = N. E. by E. $\frac{1}{8}$ E.

June 16 E. 33° N. = N. 5 E. = N. E. by E.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.

June 9 E. 34° N. = N. 5 E. = N. E. by E.

June 12 E. 34° N. = N. 5 E. = N. E. by E.

June 16 E. 35° N. = N. 4 $\frac{1}{2}$ E. = N. E. $\frac{1}{8}$ E.

LAKE SUPERIOR, LAT. 48° N.

Sunrise. Amplitudes. Bearing P'ts. Bearing Comp.

June 9 E. 35° N. = N. 4 $\frac{1}{2}$ E. = N. E. by E. $\frac{1}{8}$ E.June 12 E. 35° N. = N. 4 $\frac{1}{2}$ E. = N. E. $\frac{1}{8}$ E.June 16 E. 36° N. = N. 4 $\frac{1}{4}$ E. = N. E. $\frac{1}{4}$ E.

With a compass correct magnetic, the difference between the observed and true bearing or amplitude will be the variation for the locality. Should there be any deviation on the course the vessel is heading at the time of taking the bearing, the difference between the observed and the true amplitude after the variation is applied will be the amount of deviation on that course. If the correct magnetic bearing is to the right of the compass bearing, the deviation is easterly, if to the left, the deviation is westerly.

A GREAT CANADIAN PROJECT.

The following letter on the subject of the Georgian Bay and Montreal canal has been received at the Liverpool Chamber of Commerce from the Hon. J. Israel Tarte, Minister of Public Works of Canada:

I beg to acknowledge receipt of the resolution adopted by the Chamber of Commerce of Liverpool in reference to the project of the Georgian Bay canal. That question has been receiving a good deal of attention at the hands of the Canadian public men for some years, but the enterprise is of such magnitude as to make it necessary to look carefully into it. The Dominion has built, at large expense, a complete system of canals from the Great Lakes to the St. Lawrence. That system is now being completed and perfected. The Department of Railways and Canals and the Department of Public Works are actively working in that direction. The river St. Lawrence from Quebec to Montreal is being improved with every possible speed. Now, the Georgian Bay, on Lake Huron, is very rapidly becoming an accumulating point for western trade. The Dominion government is completing what is known here as the Trent Valley system, which consists of works of lockage destined to bind between themselves several splendid water stretches. That new waterway will be 200 miles long, and will give communication during seven months of the year between Midland, on the Georgian Bay, and the Bay of Quinte, on Lake Ontario.

The Arnprior & Parry Sound Railway has its terminal point at Parry Sound, another port on the Georgian Bay. The distance from Parry Sound to Montreal is about 380 miles. Last year that railway had handled about 15,000,000 bushels of grain, besides a large quantity of other merchandise.

Collingwood is also a port on the Georgian Bay. Between Collingwood and Toronto, on Lake Ontario, the distance is 70 miles. The Toronto Board of Trade and a great many far-seeing public men believe that the construction by the government of a railway connecting Collingwood with Toronto would shorten the distance between the Great Lakes and the St. Lawrence route, and thereby develop a very large traffic.

I take the liberty of giving you these details in order to call the attention of the Liverpool Chamber of Commerce to the large undertakings that are now under way in the Dominion, in view of diverting to British and Canadian channels as much as possible of the western trade.

I may be permitted to add that the port of Montreal, which is the receiving point of that trade, and also the head of ocean navigation, is being improved as speedily as possible.

While I have the privilege of addressing the Chamber of Commerce of Liverpool, I must say that we, on this side of the ocean, cannot understand the reasons why the English underwriters have increased their rates in a way so detrimental to the interests of the Dominion. During the last

three years the St. Lawrence river has been made safer than ever before. A careful testing and sweeping of its channel has been carried out under the control of my department. The curves and bends of the river have been widened. Several parts of the river have been deepened. The buoy system has been attended to with every possible attention.

I hope that the Chamber of Commerce will pardon me for entering into these considerations. But I have thought that perhaps they would be of some interest, as there is such a large trade between Liverpool and the Dominion.

MARITIME LAW.

THE SANFIELD.

(Circuit Court of Appeals, Second Circuit. Nov. 3, 1898.)

1. SHIPPING—DAMAGE TO CARGO—SEAWORTHINESS.—A stipulation in a contract of affreightment exempting the vessel from liability for loss and damage to the cargo occasioned by any latent defects in the hull of the vessel does not extend to such as were in existence at the commencement of the voyage; nor does the provision of section 3, of the Harter act, by which, if the owner has exercised due diligence to make the vessel in all respects seaworthy, neither he nor the vessel is liable for losses arising from the dangers of the sea, relieve the owner or vessel from the consequences of unseaworthiness at the inception of the voyage, though due diligence be shown.

2. SAME.—A vessel is not required to be impregnable to the assaults of the elements to be seaworthy, but the test is whether or not she is reasonably fit for the contemplated voyage. The fact that a single rivet, among many thousands used in the construction of her hull, was not as strong as the average, and parted under the stress of extraordinarily stormy weather, does not raise a presumption of unseaworthiness, rendering the owner liable for a resulting damage to the cargo.

3. SAME—PRESUMPTION OF SEAWORTHINESS.—A steel steamship was of first-class construction and rating. She was new, and had been thoroughly surveyed by the Lloyds within a year preceding the voyage in question. She had thereafter made a number of voyages without injury, and two weeks after she entered upon that voyage she was uninjured. After that, the testimony of the crew showed, she encountered the worst weather they ever experienced, and she received much injury. During such time one of the rivets fastening the steel plates to the frame of the hull broke, and sea water entered through the space, and injured the cargo. It was shown that the holes through the plate and the frame were not exactly true, and that, in driving the rivet, when hot, it had received a cant which perhaps weakened it somewhat, but not to any substantial extent. Held, that such facts were insufficient to raise a presumption of unseaworthiness at the inception of the voyage.

4. SAME—MANAGEMENT OF SHIP—NEGLECT TO OPEN SLUICES.—The question of a sluice gate designed to empty the bilges was neglected for 20 days, during heavy weather. The accumulating water overflowed the bilges, and damaged the cargo properly stowed in the hold. Held, that the neglect to open the sluices, if a fault, was one pertaining to the "management of the ship," within section 3 of the Harter act, and that the ship and owners were exempted thereby from liability for the resulting damage.

Appeal from the District Court of the United States for the Southern District of New York.

This was a libel by the American Sugar Refining Company against the Steamship Sandfield, to recover damages for injury to a cargo of sugar. From a decree dismissing the libel (79 Fed. 371), the libellant appeals.

THE LADY WIMETT.

(District Court, N. D., New York, Feb. 27, 1899.)

1. TUG AND TOW—LIABILITY OF TUG FOR INJURY OF TOW.—MEASURE OF CARE REQUIRED.—A tug is neither a common carrier nor an insurer, and is bound only to the exercise of ordinary care for the safety of a tow, and when using such care she is not liable for the sudden sheering of the tow.

2. SAME.—BURDEN OF PROOF.—The burden is on a libellant seeking to recover damages from a tug for an injury to a tow to prove that the tow was not handled with that degree of skill which prudent navigators usually employ in similar circumstances.

3. SAME.—SHEERING OF TOW—USE OF BRIDLE.—The Lady Wimett, a steam canal boat, undertook to tow another canal boat from Black Rock Harbor to Buffalo Harbor through the Erie Basin. The vessels met another tug and tow when about entering the Basin, which compelled them to keep near the right side of the channel; and when close to a pier, the tow took a sudden sheer to starboard, the chock and cleat gave way when the tug attempted to overcome the sheer, and the tow struck the pier and was sunk. There was nothing unusual in the undertaking of the tug, nor in the state of the wind or water, to render it more than usually hazardous. The hawser was of the usual length, and the chock and cleat were, as far as was or should have been known by the Wimett, in good condition. Both vessels were properly manned and managed. Held, that there was nothing in such evidence to show that the tug was in fault, nor could fault be imputed to her because of a failure to use a bridle, which was not usual, nor required for the towing of a single canal boat.

This is a libel, filed by the Deering Harvester Company and Emile Thiele, as owners of the cargo of the canal boat Niobe, to recover damages for the loss of the cargo, alleged to have been occasioned by the negligence of the steamer Lady Wimett while towing the canal boat from Black Rock Harbor to the harbor of Buffalo.

COMPRESSED AIR TO RAISE SUNKEN VESSELS.*

As I write these lines an object lesson for the engineers of the world is in progress. One of the great ocean liners is fast on the rocks of Cornwall, and before these same lines greet the eye of the reader, the fate of the Paris may be decided. Whether she is saved or lost the lesson remains, and may be made of more value than that of many ships.

The Paris is built with the usual safety device of watertight compartments, which have already once saved her, and have also been effective in many other cases. The number of her compartments is, I believe, at least a dozen. There are big holes knocked in the bottom of the ship, and the water enters freely into one or two compartments, so that it is impossible to pump them out. The absurd attempt is being made to pull her off the rocks with these same compartments full of water to the level of the sea outside, although she went on at nearly high tide and under considerable headway. The filled compartments are forward and among other devices, it is, at this writing, proposed to fill some of the after compartments with water for the purpose of lifting the bow.

The event may be against me, but these proceedings seem absurd. There is a means of expelling the water from the filled compartments so obvious, so indisputably adapted to the purpose, and so certainly effective that it seems unaccountable that some engineer has not suggested it before this. Close the hatches of the flooded compartments and drive the water out by forcing air in. As a pressure of 1 pound of air (or of anything else) more than balance two feet of water, a pressure of 10 pounds would more than balance and expel the 18 feet of water said to be in the hold. It is not necessary to speak of any of the details of the application, as any engineer should be competent to look after them. It would not, of course, make the slightest difference how big the holes might be in the bottom, as the water would be expelled and kept out on the same principle as in the old-fashioned diving bell. The pressure against the bulkheads could be met by timbers extending from one to another. The deck should certainly be strong enough to resist the upward pressure. The pressure could never be greater than just sufficient to expel the water, as the surplus air would at once begin to follow it and escape. There should not be any difficulty, either, for an emergency like this, and with compressed air in such wide use, in finding air compressors, or even blowing engines, that in a few hours could be rigged to supply the air. With a copious supply of air the safety of the vessel could be assured between tides.

The saving or the loss of the Paris becomes a trivial and a transient matter in itself in comparison with the larger lesson which her predicament enforces. Beyond the device of the separating bulkheads, when their doors are happily closed and they are strong enough to resist the pressure, the one solitary hope for a leaky ship is pumping. It is a fight at once between the leak and the pump, and only comparatively small leaks are defeated by the pump. The saving efficiency of the pump is not the full capacity of it, but only the difference between its capacity and that of the leak. If the leak rate is nine and the pump rate is ten there is some hope that the pump may win, but it all depends upon the prolonged maintenance of the one-tenth of excess. The pumping out a leaky ship is a very different thing from pumping out a tight one. The work is not only so enormously wasted while it is going on, but it never is finished. The necessity for pumping is as unrelenting after hours or days of work as at the beginning.

In the use of air pressure for expelling water there is none of this wasted work. All of the air pressure applied above the water is effective in driving it down. The leak is stopped the instant the pressure above the water is sufficient to balance the pressure that is driving it in. Supposing the ship to be afloat, and not on the rocks, she is saved at that moment. The expulsion of the water after that is only a question of time, and not one of uncertainty or of anxiety; and after the water is expelled there is nothing more for the air compressor to do but to maintain the pressure. As I said before, it would make no difference to the air as to how big the leak might be, and it would, of course, work a little better against a big leak than against a little one, as the water would flow out more freely. The leak against which the pump would be useless would find the air compressor at its full effectiveness.

The air would, of course, only drive the water down to the level of the leak, as it would then find its opportunity to

escape; but leaks usually occur on the bottom or far below the water line. Supposing the system of air protection against leakage to be generally adopted, and provision for the employment of the air to be provided for in the design and construction of the ship, there would, of course, be air-locks provided in the bulkheads or the decks, by which men and material might enter. Men would experience no difficulty in working under the pressure required to expel the air, and would often be able to stop the leak when discovered.

Obviously the lesson which the incident of the hour should enforce is that the air compressor rather than the water pump should be employed, not merely for the present emergency, but universally in ships as a cheaper and vastly more efficient protection. The use of compressed air for water expulsion should be provided for in the construction of the ship, especially in the staying of the decks and bulkheads, and in the construction of an occasional air-lock instead of single doors or hatches. No elaborate system of piping would be required, as air hose would be preferable and could be carried wherever wanted. The compressors would cost no more than the pumps which they would supplant. In the navy, where the employment of compressed air for auxiliary power transmission is still debated, this one use of the air should be an overwhelming argument for its installation.

NOTICE TO MARINERS.

(Correction of Notice to Mariniers.)

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—ILLINOIS.

TREASURY DEPARTMENT.
OFFICE OF THE LIGHT-HOUSE BOARD,
WASHINGTON, D. C., May 31, 1899.]

CALUMET PIERHEAD (SOUTH CHICAGO) LIGHT STATION.—Notice is hereby given that, on or about July 1, 1899, a 10-inch steam whistle will be established at this station, on the outer end of the north pier at the mouth of the Calumet river, 11 miles southeasterly of Chicago breakwater, to sound, during thick or foggy weather, blasts of 5 seconds' duration, separated by alternate silent intervals of 10 and 40 seconds, thus:

Blast	Silent interval	Blast	Silent interval
5 sec.	10 sec.	5 sec.	40 sec.

The fog signal building is a brown corrugated, iron structure, with gable roof, and stands on the outer end of the pier immediately in the rear of the light tower.

By order of the Light House Board.

FRANCIS J. HIGGINSON,
Rear Admiral, U. S. Navy, Chairman.

COLOR OF SEA WATER.

The late discussion on the color of sea water has brought out a statement from the well-known scientist, John Aitken, that the yellowness of the reflecting particles found in large quantities in some sea water is not the exclusive cause of the greenness which is often vividly apparent, but that some waters are fundamentally greener than others. Mr. Aitken says: "The greenness of the Northern seas is in part due to the reflecting particles being yellow, and the reflected light, therefore, deficient in the more refrangible rays. These yellow sand particles not only explain part of this greenness, but they also explain the comparative darkness and deadness of the water in which they are found, the particles reflecting so little light. Some water, however, collected about a mile seaward—presumably outside of the influence of these yellow particles—was examined in a glass tube, 7½ m. long, and was found to be of a blue-green color." It is further stated that the water on the west coast of Scotland transmits a blue-green light when examined in a tube, and is distinctly greener than the water of the Mediterranean.

CATCH OF BRITISH SEA FISH.

The opinion recently voiced that the resources of the sea are inexhaustible, receives some confirmation from recently published figures. Though English fishing boats are larger and more numerous yearly, the "take" does not diminish, like that of wild fowl, but increases. The total value of the catch of British sea fish has risen from \$30,000,000 to \$40,000,000 in the course of the last ten years. The catches of individual boats during the last few weeks have gained the record. One trawler, the St. Louis, brought back \$4,000 worth of fish from the coast of Ireland, after only eighty hours' trawling. In the next week this record was again eclipsed by a second vessel, the Honoria, which reached Grimsby with 1,500 halibut. The fish sold for \$4,500.

LAUNCH OF THE DOUGLASS HOUGHTON.

The large steel cargo steamer Douglass Houghton was successfully launched on Saturday afternoon from the yards of the Globe Iron Works Co., Cleveland. The Houghton is the largest vessel ever built at the Globe yards and was designated No. 64 at the yards of her builders.

On account of the Saturday half holiday, and the fine weather, a large number of spectators gathered to witness the launch, which was a perfect one in every respect. As the vessel left the ways, Miss Clare Hanna, daughter of Mr. L. C. Hanna, performed the christening ceremony with that appropriate grace and composure only to be attained by one who is to the manner born. Therefore, the Houghton laved her 475 feet of length in the limpid waters of the old Cuyahoga river course, under the most promising auspices, at the hands of her actual God-mother, with sponsors at the ceremony as follows: Miss Fannie Hanna, Miss Worswick and Miss Stone under the escorts of Mr. R. L. Ireland, Mr. Luther Allen, Mr. L. M. Bowers and Capt. John Mitchell.

The Houghton, which was built to the order of the Bessemer Steamship Co., is a sister ship to the Samuel F. B. Morse, of the same line, which is the largest vessel on the lakes. The Houghton is 475 feet over all, 456 feet keel, 50 feet beam and 29 feet deep, molded dimensions. She will have quadruple expansion engines, cylinders 26½, 37, 54½ and 80 inches by 42-inch stroke. Steam will be furnished by four Scotch type boilers 13.4 feet in diameter and 11.6 feet long to be allowed 200 pounds steam, working pressure. The Houghton will be completed and ready for sea the latter part of July.

Among the strictly marine men who witnessed the launch were Capt. John Mitchell, Capt. Frank Danger, of Port Huron; Mr. A. B. Conkey, W. J. Symons, of Fairport; Capt. George L. De Wolf and Mr. James McGrath, U. S. local inspectors of steamboats; Mr. R. L. Newman, Capt. Murch, Mr. Duncan Fraser, shore engineer for the Bessemer Steamship Co.; Mr. Walker, Buffalo; Mr. Farley, Capt. Morton, ship-husband of the Wilson Transit Co.; Capt. Chapman, and quite a host of others. The Houghton will be equipped with all modern appliances to facilitate the handling of ship and cargo.

CHARTERING—NO OTHER DECISION POSSIBLE.

Judge Lochren, of the United States Court, made a decision a few days ago of great importance to grain men, and one that will also be of interest to other shippers on the Great Lakes. The decision is also of interest to vessel agents, for it holds that where the owner or an authorized agent of a vessel makes a contract with a shipper at a certain rate, the owner is held to carry out the contract to the letter. The case in which the decision is rendered is entitled: Ames-Brook Co., libelant, against W. H. Mack and the Lake Erie Transportation Co. The decision is in favor of the Ames-Brook Co. The case is as follows:

Last fall the Ames-Brook Co., Duluth, Minn., chartered the steamer P. P. Pratt to transport a cargo of grain from Duluth to Buffalo at 3 cents a bushel. The contract was not carried out, and the steamer was chartered to another shipper at an advance. The Ames-Brook Co. was compelled to pay another steamer 3½ cents to carry the same grain for which the steamer Pratt had been engaged at 3 cents.

The Ames-Brook Co. determined to make a test case of the charter violation by the owners of the steamer Pratt, and, if possible, set a precedent whereby this growing practice might be abated. It accordingly libeled the steamer Pratt and brought suit for the difference between the agreed rate and the rate that the company finally had to pay as the result of the refusal of the owners of the Pratt to carry out their agreement. The libelants were represented by H. R. Spencer, Esq., of the firm of Searle & Spencer, Duluth.

Judge Lochren's decision, which was filed in the United States Court in Duluth, decrees that the defendant steamship company shall pay the Ames-Brook Co. \$425, with interest at the rate of 7 per cent. from Dec. 1, 1898, making a total of \$438.81. The costs are also assessed against the steamship company.

It is said that the steamship company had placed its vessel for chartering in the hands of more than one agent. One of the agents chartered the vessel to the Ames-Brook Co., and the other agent, without knowing anything about the previous engagement of the vessel, wired the owners a more advantageous offer which was accepted. All of the correspondence between the Duluth agents and the owners at Cleveland was done by telegraph.



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CLEVELAND, O., JUNE 8, 1899.

ATTENTION is called to the correction of "Notice to Mariners," contained in this issue of the RECORD, relative to Calumet pierhead, South Chicago, the former notice having been cancelled. South Chicago is now an important point and due attention should be given to the foregoing mentioned change or correction.

HERE is a charming mix-up for the Treasury Department to unravel. Apropos, in the case of the Helvetia, given a United States vessel, held by the master at a Dominion port, how is the owner to regain possession? Oh, yes! there's a United States consul or commercial agent there all right and the machinery of the Dominion government is in tip top working order, but, the master of the boat is the objective point. Now, with this hint, can the Treasury Department solve the query, or is it necessary to add another sackfull of clauses and amendments to the U. S. Revised Statutes.

QUITE a number of metal vessels that were built several years ago to carry heavy bulk cargoes on a fourteen or fifteen foot draft, are now being loaded to seventeen feet, and as much over that as there is water to float them. Masters and owners, as well as classified societies, will, of course, notice promptly any distress which the hulls might show on account of undue strains or stresses, and, it is always as well to remember, that a vessel is only as strong as her weakest part. It is possible to cruel any structure, and the heavy cargoes of iron ore that are carried without being trimmed, is not any too kind treatment for the hulls built about a decade ago. Light scantlings are not in order, or adequate to support a greatly increased draft.

THE recent decision of Judge Lochren in the United States District Court at Duluth, wherein it is held that a vessel must perform her charter, even although a better rate is offered from the same port at a later date, is perfectly in accord with universal practice and customs. Judge Lochren could not possibly have reached any other conclusion, and the owners of the vessel showed poor judgment in contesting the claims made by the original charterer. The entire loss suffered by the charterer, as well as interest on the money at the rate of 7 per cent., and in addition, all the costs of the court, are assessed against the owners, who will not, we presume, play fast and loose with their charters in the future. They "paid for their whistle" and it was eminently just and proper that they were made to do so, as would the case have been if conditions had been reversed. In this instance a mutual and amicable agreement would have saved the owners quite a few "spondoolicks."

AN instructor of navigation and seamanship, or rather that portion of it which relates to lake sailing and practice, recently brought charges against the U. S. local inspector of hulls at Chicago. The inquiry was held a couple of weeks ago but as yet there has been no decision rendered. As near as we can learn, the charges were founded on unjust discriminations exercised by the hull inspector over students who had attended the nautical school and afterwards appeared before the inspector as candidates for masters or pilots' licenses. It seems to be the accepted situation at present that the examiner was prejudiced against the "book learning" methods employed by the instructor, and consequently the candidate was made to fail in his examination. The text of these charges, evidence submitted, as well as the findings of the board of inquiry, should be given the widest publicity among the sailing community and others, including the employes of the steamboat inspection service. An unsuccessful candidate in any competitive examination is not infrequently a sore-head, and there may be nothing in the complaints as lodged before the Supervising Inspector-General of Steamboats. On the other hand, if there is, a prompt and complete explanation of the conditions should be forthcoming.

THERE is hardly any question but that the contractors on river and harbor work, had, and perhaps now have, a tacit understanding regarding bids on proposals for government improvements. Anyone who took the pains to look over the recent bids, would see that the contractor within whose district the work was to be carried on was permitted to submit the lowest offer, and thus secure the work, as the district engineer officer can but recommend the acceptance of the proposals of the lowest responsible bidder. All the denials possible from the interested parties, viz., the contractors, can not eradicate the belief that the combine existed and engaged actively in mulcting the government out of every available dollar appropriated by Congress for the special work. This feature of organization, to bolster up fictitious values on ordinary labor, can not but re-act to the detriment and disadvantage of the clique. The first steps that will likely be taken will be by the district officers of the Corps of Engineers, U. S. A., making a requisition on the government for a plant to be used in each district, thus shutting off the apparently unjust methods of bidding indulged in by private contractors.

WE would be very much in favor of a system of examination for masters, engineers and deck officers, whereby their national certificates of technical ability would vouch for their qualifications to handle vessels, machinery, equipment, etc., anywhere that the stars and stripes could be carried. According to the methods now in vogue, the most experienced masters, engineers and pilots in the lake trade are not permitted to use their experience in the harbor, river, coast or ocean service, and vice versa, the most capable men on the coast are not permitted to take charge of a "cargo droger," or handle a "water churner" crossing one of the lakes, notwithstanding the fact that it is customary for them to take vessels, sail, and, or, steam, to ports where they have never been before. The shipmaster and engineer that proceeds with all confidence, safety and success, say, from New York to Manilla, ought surely to be able to plot a course on Lake Superior and push a vessel along from point to point, and they can, but the law forbids them doing so.

IT IS NOW about time that the Honorable Commissioner of Navigation, or the Supervising-Inspector General of Steamboats issued a notice regarding the licensing of masters having charge of vessels of 700 tons and upwards. If this departure is to be sprung on lake tonnage, it is but the duty of the heads of departments to give fair and timely warning, so that the officers at present in charge of this class of tonnage may be duly prepared to take up the examination required under the statute. There is one feature that ought to be kept strictly in view, as follows: Vessels built, equipped and manned, as and for tow barges, cannot be considered as sailing vessels, such craft are always under the convoy of their towing steamer and are not intended to take care of themselves, hence it may be argued that licensed men are not required in their handling per se., the late legislation would not apply to vessels always in tow.

BOILERS can blow up in shipyards as well as anywhere else. The boiler at Leathem & Smith's yard took wings last week and demolished everything around there; luckily, or rather fortunately, no loss of life is reported.

LAKE FREIGHTS.

The feature of the week has been the common sense view which vessel owners have taken on coal freights. The rate asked for is 50 cents, and 40 cents for principal ports on Lake Michigan and Superior respectively, and quite a number, in fact the majority of vessels have cleared light rather than accept shippers' figures, which, from Ohio ports, are 10 cents lower, although the former figures were paid on some cargoes last week. Of course, the minor ports, such as Racine, Sheboygan, Green Bay City, etc., pay higher rates, 65 cents having been given to Racine and 50 cents to the latter places from Ohio ports. Sandusky to Duluth 35 cents was paid, and this figure might tempt some more small vessels, but, as we have stated, 40 cents is the freight wanted for transporting coal from Ohio ports to leading Lake Superior docks, and it is confidently expected that such will be the going rate by the end of the week, as it is certain to be if vessel owners will hold together a trifle longer on the rate as paid out of Buffalo.

Iron ore rates have been steady all week, with a fair amount of chartering at last week's quotations, except that from Marquette and Escanaba the rate improved 5 cents to Buffalo, making it 75 cents and 70 cents. The present outlook would seem to point to \$1.00 ore from Lake Superior before the close of the season, as it is now thought that enough ore to supply the coming demand can neither be mined nor transported.

Grain chartering has been dull all week, with 1 1/2 cents on oats, 2 cents quoted on corn from Chicago to Buffalo, and shippers feeling their way for a 1 3/4 cent rate. At the same time coal tonnage is not flocking to Chicago, and some of the boats have changed ports to load iron ore at Escanaba, a feature which does not look like a reduction in grain rates at the present.

CONTRACT SIGNED FOR FOUR STEEL CARGO STEAMERS 500 FEET IN LENGTH.

A contract has just been entered into by A. B. Wolvin, of Duluth, and the American Ship Building Co., the new consolidation of lake shipbuilding companies, for four steel steamers 500 feet long, to be delivered at the opening of navigation in 1900. The vessels will be built at the Lorain yard, formerly owned by the Cleveland Ship Building Co. The new steamers will be the largest on fresh water, and the first 500-ft. boats on the lakes, the next largest being the 490-ft. steamer of the Bessemer fleet contracted for delivery next season. The keel length of the four steamers will be 478 feet, with 52 feet beam and 30 feet molded depth. They will have quadruple expansion engines, cylinders 17, 25 1/2, 39 and 60 inches by 40 inch stroke. Steam will be furnished by water tube boilers to be allowed 250 pounds of steam. The boats will have 15 hatches and all the latest improvements. They will carry 8,000 tons on 18 feet of water. The cost is placed at \$350,000 each, or \$1,400,000 for the four. The owners of the new vessels are not disclosed, though it is supposed that Mr. Wolvin is acting for others, presumably one of the large steel consolidations. The American Steel and Wire Company, Chicago, are mentioned as the probable owners. The material for the construction of this fleet is said to have been partly covered by options, taken some months ago, although a recent order for 2,500 tons of finished material to go into them, has been placed with a leading Pittsburg firm.

THE ALIEN LABOR LAW.

The United States Court of Appeals, holding court in Milwaukee, Wis., handed down on Wednesday an important decision affecting the alien labor law. The decision interprets the alien law so as to apply solely to common laborers, exempting clerks and all kinds of skilled artisans, Judges Woods, Jenkins and Brown constituting the entire court, concur in the decision, which holds it was the intent of Congress solely to shut out the importation of common laborers under contract to work in mines, in lumbering camps and on railroads.

The decision is in the case of George H. Gay, of Indianapolis, who brought a clerk from Scotland on contract.

THE new dry dock now under construction by the American Ship Building Company, at West Superior, Wis., located parallel to and about 100 feet westward of the old dry dock, will be ready for operation on or about July 1, 1899. The dimensions are as follows: Length, 606 feet; width at bottom, 65 feet; width at gate, 65 feet; depth over sill and blocks, 19 feet.

LITERARY NOTICES.

The thanks of the RECORD are due the Department of Marine and Fisheries, Ottawa, Canada, for a copy of the list of lights and fog signals on the coasts, rivers and lakes of the Dominion of Canada, corrected up to date. We note that more than usual attention and space has been given to the aids to navigation established in Georgian Bay, and should say that the latest issue is thoroughly inclusive and comprehensive in all its features.

Journal of the American Society of Naval Engineers, Vol. XI, No. 2, for May, published quarterly by the Society, contains several valuable articles written by men of international repute. Charles H. Harwell, Esq., is writing a continued article on "Reminiscences of Early Marine Steam Engine Construction and Steam Navigation in the United States from 1803 to 1850." "Electricity on Board Ship," by S. Dana Greene; also an exhaustive article on "Trials and Experiments made in H. M. S. Argonaut," by Sir John Durston, K. C. B., R. N., Engineer-in-Chief of H. M. Navy.

The first annual review of the copper mining industry of Lake Superior, containing an account of early explorations and discoveries in the Lake Superior copper region, geological formation of the copper ranges, statistics of production, and a general resume of the progress of development has been issued from the press of the Mining Journal Co., Marquette, Mich., price 50 cents. The review covers nearly 200 pages, every line of which is interesting and advantageous to those engaged in the industry as capitalists or miners, from an historical standpoint the work is invaluable, and great credit is due the authors and publishers for collaborating such a mass of important and valuable data regarding an industry and section of the country of which too little has been hitherto published.

"Notes on Naval Progress," published by the Office of Naval Intelligence, Washington, D. C., Commander Richardson Glover, U. S. N., Chief Intelligence Officer, Navy Department. This pamphlet contains the particulars of the principal navies of the world in 1898, as compiled by Naval Constructor Sussenguth, German Navy, published in the March number of the Marine-Rundschau, issued at Berlin, giving a comparison of the principal navies of the world in 1898, has been found concise and instructive, and is given in this the first of the General Information Series for 1899. The difficulty of obtaining exact information regarding vessels of other nations will be apparent from errors regarding our own navy in this seemingly carefully prepared article, some of which are corrected in foot notes by the Intelligence Office, U. S. N.

The North Atlantic Pilot Chart, June 1st, published monthly at the Hydrographic Office, Bureau of Equipment, Department of the Navy, Washington, D. C., Capt. J. E. Craig, U. S. N., Hydrographer. This issue of the North Atlantic Pilot Chart is fully up to the standard of the previous excellent and valuable issues of this useful delineation. We note that the fog banks for May reached neatly and inclusively between the 70th and 40th meridians west of Greenwich, thus covering a plot of 30° or nearly 1,800 miles, through the greater portion of which the trans-Atlantic routes for passenger steamers traverse. If on leaving New York, a course was shaped a few degrees further south, it would lead clear of fogs, but time, also rapid transit is now the ne-plus-ultra of Atlantic travel, hence the risks run. A very marked cyclonic hurricane is shown for last month in 35° W. longitude, crossing the path of Atlantic Anglo-American routes. In the space of four days a hurricane from the north worked around the compass and traveled with its full force due north beyond the latitude of observation. The usual data regarding derelicts and wrecks, icebergs and field ice, drifting buoys, etc., is contained in the June issue of the delineation, which always calls for the unqualified praise so worthily bestowed on account of its international reputation and practical value.

We have been favored with a copy of the proceedings of the Convention of Weather Bureau Officials held at Omaha, Neb., in October last, and just from the press at Washington. The report contains several articles written by the more prominent officials of the Weather Bureau, and more or less interesting, according to the geographical location of the reader. These conventions are held at intervals with the object of affording an opportunity for exchange of views among the employees of the Weather Bureau, and, incidentally, we presume, to weld the bonds of departmental esprit-de-corps among the several branches of the service. A paper read by Inspector E. A. Beals, for a time stationed

at Cleveland, on "How to Promote the Best Relations with the Press, Commercial Bodies and Scientific Organizations," is of more than ordinary interest, and marks Mr. Beals as a very close observer of men, morals, and manners. Mr. N. B. Conger, marine agent at Detroit, read a paper on "Forecasts and Special Warnings, How Best Calculated to Aid Maritime Interests on the Lakes, and Reach Those Interested." The local forecast officials at other lake stations also contributed to the proceedings of the convention. We note that the subject of substituting shapes instead of flags for storm warnings, etc., was brought up and fairly well argued, this is a topic which the MARINE RECORD dealt with at some length a few years ago, and of which we may have something more to say in the near future, as well as dealing at greater length with the points brought out by the Weather Bureau sages in their recent harmonious convention, over which the genius of Prof. Willis L. Moore, Chief U. S. Weather Bureau, so charmingly presided.

"Meteorological Chart of the Great Lakes," published by the authority of the Secretary of Agriculture, containing normal data for June, and showing the formation as well as prevalence of fog banks on each lake during the month of May, also the precipitation and lake levels from January to April of this year. As we have remarked before, there is a lack of showing the density of fogs, in shading the chart, light fogs of says eight days duration during the month, are given a heavy shading, and consequently more prominence than a dense, impenetrable fog bank would be given if it lasted or prevailed for some seven days, consecutively, or during portions of the month. The point to be determined from all these observations showered in upon the Weather Bureau, is the center, backbone, or axis of the fog banks, thus pointing out to the lake pilot how to shape a course so as to avoid the most dangerous portions of the fog banks. Attention should be directed towards obtaining the greatest dew point or humidity, and watching this in particular, its location, movement and duration on each lake during the season. The idea of telling us how many days that fog prevails is of no practical import so far as we can see, on the other hand, knowing the prevailing center or axis of local periodical fogs and the relative decreasing humidity from this point, a course might be shaped so as to avoid it. From the chart now before us, it appears that Lakes Michigan Huron and Erie, also Green Bay, were completely enveloped in a fog on certain dates, while no reports are said to be had from Lake Ontario, Western end of Lake Superior or Georgian Bay. On the whole this meteorological chart, as its predecessors, don't seem to convey any practical or useful information to the lake pilot, consequently to no one else.

STRANDING OF THE PARIS.

The Treasury Department, through the Supervising Inspector-General of Steamboats, has notified the International Navigation Co. that it intends to hold an inquiry as soon as practicable into the stranding of the Atlantic liner Paris and the company has replied, offering the government every assistance in its power.

Mr. Dumont, the Government Supervising Inspector of Steam Vessels, said that it was not his purpose to send his inspectors to the scene of the accident, as nothing could be gained by such a course, but very soon after the arrival in this country of the responsible officers of the vessel an investigation would be held to fix the responsibility for the disaster. This, he said, was the usual course.

The maximum penalty which can be imposed by the inspector general for responsibility of accident is the revocation of the license of the guilty persons.

WOLVIN A PROMOTER.

The foxiest member of the Lake Carriers' Association is A. B. Wolvin, of Duluth, says the Detroit Free Press. He organized the Zenith Transportation Co., which had built four of the finest freighters on the lakes. Then he sought out several newspapers and announced that he had been offered \$40,000 a year by President James J. Hill of the Great Northern road to establish a line of trans Pacific steamships for that road, with Seattle and Asiatic ports as the termini. The newspapers "bit" and the report went around the lakes. Just what his object was, in making this announcement cannot be seen at this distance, but shortly thereafter came the report that he had sold out the fleet to the American Steel & Wire Co. for a sum that netted his own company \$300,000.

Then Mr. Wolvin lay about for a time and finally gave the order to the trust for four 500-foot steamers, to be the

largest ever put afloat on fresh water—steamers big enough to make the once famous Onoko look like a misshapen yawl. Of course, he represents a syndicate, but Mr. Wolvin does not choose just at this time to tell who the men are. He will undoubtedly remain on the lakes and manage the fleet for a time, and then may sell it out to big advantage just as he did the Zenith company's fleet.

His organization and disposition of that fleet, his successful conduct of the Duluth agency of the Western line and his various actions as a prominent member of the Lake Carrier's Association have brought him into prominence all over the lakes, have made for him a large number of friends and have won for him the respect of everybody as a man of great executive capacity. Present indications are that he has turned promoter for keeps. There is a lot of money in it for a man of his capabilities and temperament. There is not the slightest doubt that he organized the syndicate that is building the 500-footers. Big things may be expected of him in the future as he is yet a young man.

LAKE SUPERIOR ORE SHIPMENTS.

Notwithstanding the late opening of navigation this season figures show that in iron ore shipments from Duluth Superior and two Harbors to June 1st, the totals were 925,782 tons, and the shipments for the last year, on the same date, were 805,897 tons, showing an increase of 119,897 tons. The first cargo of ore that was shipped this season from Duluth was on May 4th, as compared with April 21st, as the date of the first cargo to go forward last year. The first cargo to go forward from the Iron Range docks at Two Harbors this year was on May 3d, while shipping from there last year also began in April. The Duluth, Missaba & Northern docks this season, to June 1st, have shipped 344,482 tons as compared with 249,140 tons on the same date last year. The Duluth & Iron Range has shipped 495,300 tons as compared with 376,745 tons for the same period last year. The Eastern dock on Allouez Bay has shipped 86,000 tons this year, as against 80,000 tons this time a year ago.

It is expected that the shipment of ore from the head of the lakes will be fully 7,000,000 tons this season, and if the other ore shipping ports show corresponding increases, there will be no shortage of commodity at the receiving points. It is reported that 80 cents has been paid for ore transportation, and vesselmen who have been heard to discuss the matter have expressed the opinion that \$1 will be paid by September 1st.

LAUNCH OF THE MAE AT TOLEDO.

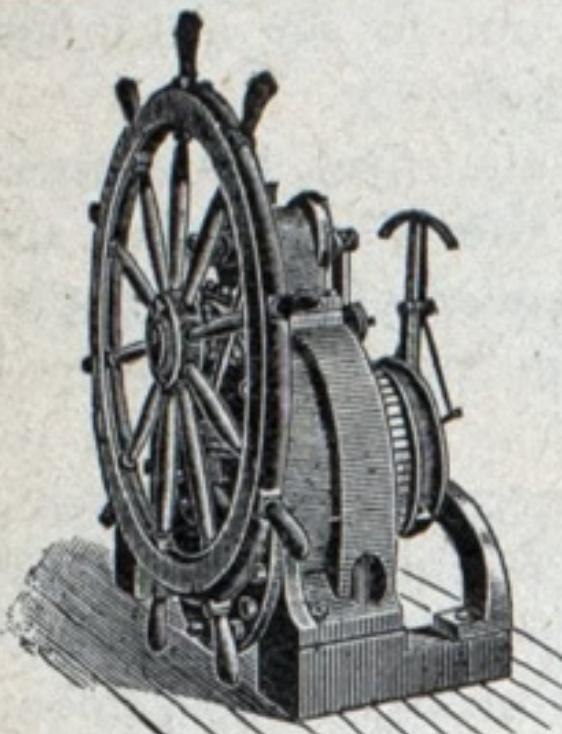
The steel cargo steamer Mae, built at the yards of the Craig Ship Building Co., Toledo, O., to the order of Messrs. Miller, Bull and Knowlton, the New York & Porto Rico Steamship Co., New York, will be launched on Saturday next, June 10, at 3:30 p. m., according to the present intention of her builders.

The general dimensions and carrying ability of the Mae are as follows: The hull is of steel, 263 feet over all, 42 feet beam and 25 feet molded depth. Bilge keels, each 125 feet long. She will be of about 2,100 gross tons, with a mean draft when fully loaded of 19 feet. The dead weight capacity will be about 3,000 tons. The motive power will consist of a triple-expansion engine placed well amidships having cylinders 22, 37 and 61 inches in diameter by 36 inches stroke, the boilers being of the Scotch type, of steel, two in number, and 12½ feet by 12 feet. The Ellis & Eaves induced draft will be used. She will also be equipped with steam steering gear, steam windlass, hoisting engines, and an electric light installation. She will carry two pole spars.

The Mae has been built according to the rules of the American Bureau of Shipping, New York, and will be given a high rating in their classification register, "The Record of American and Foreign Shipping," in which all the best class of coast and ocean tonnage is regularly rated according to the rules of the society.

VESSELS classed and rated by the American Bureau of Shipping in the "Record of American and Foreign Shipping" this week are as follows: Screw, Mexico, owned by James E. Ward & Co.; screw, Nantucket, owned by the Merchants & Miners' Transportation Co.; screw, Chalmette, owned by the Southern Pacific Co.; ship, Commodore T. H. Allen; bark, Essex; ship, John McDonald; American barge, Coleraine; schooner, Merrill C. Hart; American bark, Trojan; schooner, Thos. A. Ward; British half brig, Moss Glen; Swedish bark, Prins Karl, and American schooner, Henry O. Barrett.

Queen City Patent Hydraulic Steerer.

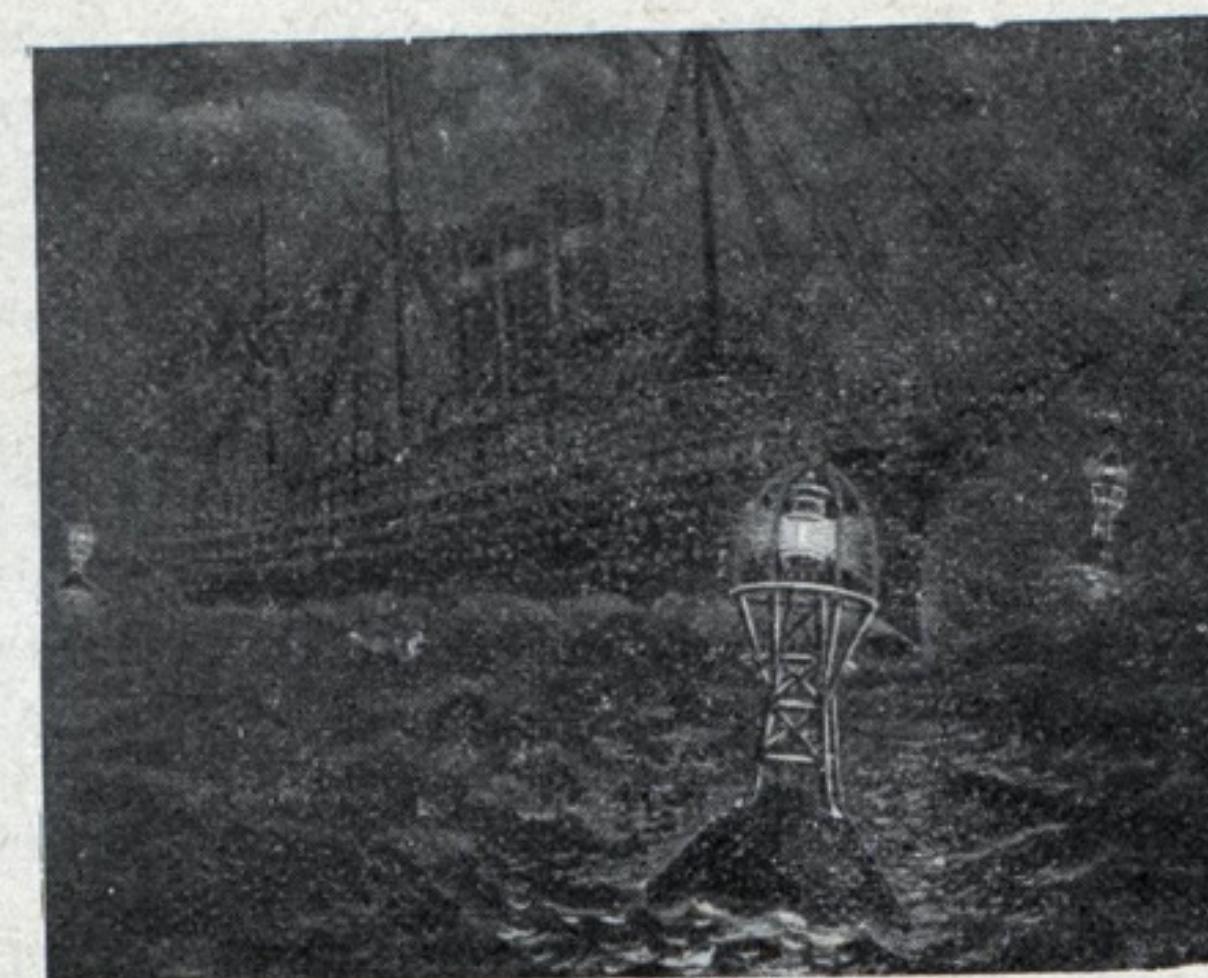


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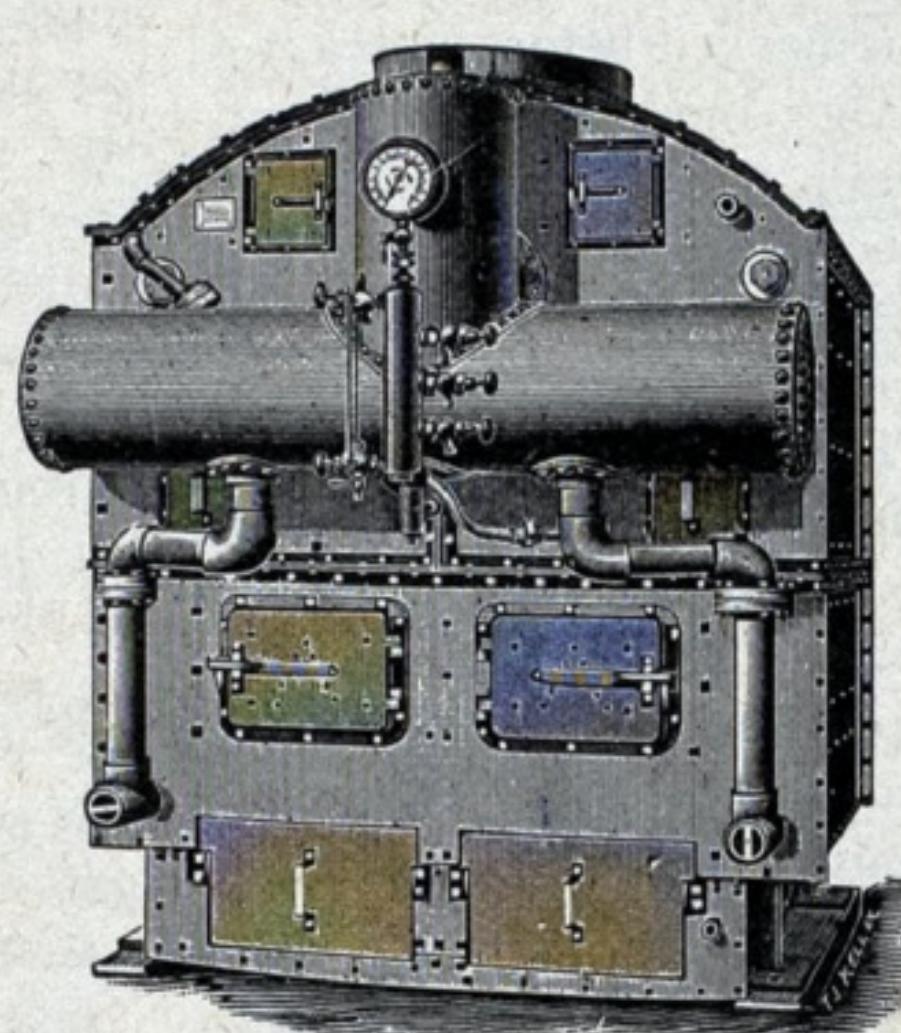
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CANADIAN LIGHTS AND FOG SIGNALS.

We have received through the courtesy of the Department of Marine and Fisheries, Ottawa, Can., a copy of the list of lights and fog signals on the coast, rivers and lakes of the Dominion, corrected to April 1899.

With respect to lights, the following caution is very pertinent announced.

The intrinsic power of a light should always be considered when expecting to make it in thick weather. A weak light is easily obscured by haze, and no dependence can be placed on its being seen.

Colored lights are also inferior in power to bright or white lights, and more quickly lost under unfavorable circumstances.

In some conditions of the atmosphere, white lights may have a reddish hue. The mariner should not trust solely to color where there are sectors, but verify the position by taking a bearing of the light. On either side of the line of demarcation, between white and red, and also between white and green, there is always a small arc of uncertain color.

It is stated in regard to fog signals that, having in view the varying distances at which a fog signal can be heard at sea, and the frequent occurrence of fog near to, but not observable from a fog signal station.

Mariners are cautioned that, whilst they are entitled to assume that every endeavor will be made to start fog signals as soon as possible after signs of fog have been observed, they should not, when approaching the land in a fog, rely implicitly upon these fog signals, but should always use the lead, which, in nearly all cases, will give sufficient warning.

Mariners are strongly cautioned that they must not judge their distance from a fog signal by the power of the sound. Under certain conditions of the atmosphere the sound may be lost at a very short distance from the station, and these conditions may vary at the same station within very short intervals of time.

The expression "foggy weather" means that the state of the atmosphere is such as to make objects indistinct.

QUEBEC'S LOCATION.

Most people are accustomed to think of Quebec as being almost at the edge of the Arctic Circle. As a matter of fact most of the great capitals of Europe are farther north.

London, for instance, is full 325 miles from the north of the Canadian City, while Glasgow is 675 miles and St. Petersburg 1,025 miles nearer the North Pole. Even Paris,

which everyone considers as essentially a southern city, is 150 miles farther north than Quebec.

Going westward from Quebec the same parallel passes near Duluth and just touches the mouth of Columbia River; crossing the Pacific, it rests on the northern part of Japan and more southerly points in Siberia. Following the same parallel to the eastward, it passes near Lyons in France, and close to the boundary line between Switzerland and Italy—going far to the south of the German Empire, and across the southern part of Hungary.

The difference in climate in Europe and Canada, is a matter for which the Gulf Stream is responsible, nor can it be ascribed to any other agency.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo.....	852,000	235,000	587,000	74,000	322,000
Chicago.....	4,679,000	5,762,000	1,233,000	326,000	568,000
Detroit.....	127,000	50,000	11,000	3,000	1,000
Duluth and Superior	6,069,000	971,000	890,000	101,000	118,000
Milwaukee.....	8,000	4,000	6,000	—	77,000
Montreal.....	325,000	57,000	465,000	4,000	12,000
Oswego.....	—	—	—	—	—
Toledo.....	566,000	587,000	175,000	1,000	—
Toronto.....	39,000	—	15,000	—	10,000
Grand Total.....	26,185,000	13,302,000	8,236,000	932,000	1,342,000
Corresponding Date, 1898.....	22,587,000	21,159,000	7,869,000	1,282,000	583,000
Increase.....	1,993,000	—	422,000	243,000	—
Decrease.....	—	428,000	—	—	113,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York, report the condition of the Eastern freight market as follows, the list shows but few charters of steam tonnage during the current week, though we are pleased to report a higher level of rates and a general improvement in the demand for tonnage. 3s. 3d. to Cork f. o. has been reached for several boats of handy size to load during June and early July, but mainly from the outports, where the stock of cereals is increasing. Deal and timber freights are proportionately stronger, whilst owners

are only sparingly offering their vessels for this business. Time charterers have not been active, owners in most cases demanding higher rates than charterers appear prepared to pay at the moment.

We have nothing new to add to our remarks of last week in regard to sail tonnage; the market remains firm under continued scarcity of tonnage, and rates show no appreciable variation.

GENERAL AVERAGE CLAIMS.

The Western Transit Co. is taking legal steps to have the unclaimed and damaged merchandise that was recovered from the stranded steamer Harlem last fall sold for general average charges.

Papers in the case have been filed in United States Court, reciting that the answer day in the action has expired, and no claim for the merchandise has been made. It is further declared that the entire value of such merchandise does not exceed \$100, and that the expense of keeping it will soon be greater than the actual value of the goods.

About 5 per cent. of the cargo from between decks, which was recovered, is damaged, or the owners are unknown. Some of the damaged goods have been refused by the consignees.

The Western Transit Co. has libeled this part of the cargo for general average charges. H. R. Spencer, Esq., Duluth, the well known admiralty lawyer, is proctor for the libelants.

THAT GOVERNMENT CONTRACTORS' COMBINE.

The recent complaints made regarding the alleged combine of contractors on river and harbor work is denied by several of the bidders on recent proposals and they come back with the statement that they would be justified in doing so, as competition has reduced their profits to a minimum.

A Michigan contractor broke the so-called combine on a big job at Sandusky, and the Lake Erie contractors say he will find out to his cost that he has made a great mistake. It is said that the big money that has been made in dredging contracts on the lakes has been made at points where there was small competition or none at all.

It has been suggested by a Lake Erie contractor that the government should fix a reasonable schedule of figures for the various classes of work. This, he argues, would prevent squeezing the government, and allow the lowest bidders a fair profit.

LAKE SUPERIOR LEVELS.

According to the records of J. H. Darling, of the United States Engineer Corps, at Duluth, the mean level in May this year was 0.72 feet above low water datum. This is 0.71 feet higher than it was the preceding month, 0.79 feet higher than in May a year ago and 0.50 feet higher than the average May stage for the 26 years from 1872 to 1897. In other words, the average stage of water for May this year was six inches higher than the average for 26 years.

The water has come up very favorably this year. It was June 1 last year before Lake Superior showed any very appreciable gain in depth. The copious rains in the Lake Superior region this spring have brought this about.

If the waters of the lake continue to show corresponding gains there will be an excellent stage for the transportation interests of the lakes during the entire season, which will go a great way toward making up for the delays on account of strikes and the late opening of navigation in the spring for vessels will be enabled to carry larger cargoes than if the stage of water were only normal.

ATMOSPHERIC HUMIDITY.

The wet bulb thermometer, for determining moisture in the air, is made and used as follows: provide two thermometers and tie a bit of thinnest muslin neatly around the bulb of one of these and keep it soaked with water. Lift this thermometer out of the water and whirl it briskly through the air for two minutes, if the air is very dry, and for three or four minutes if the air is very moist. Read it quickly and it gives the temperature of the thin layer of water evaporated under the influence of the wind produced by whirling. The dew point of the air in which the thermometer is whirled about as far below the wet bulb as this is below the temperature of the dry bulb similarly whirled and read rapidly. The two thermometers may be hung side by side on a short piece of string for convenience, and this is then called the "sling psychrometer."

"Frances," said that little girl's mamma who was entertaining callers in the parlor, "you come down stairs so noisily that you could be heard all over the house. You know how to do it better than that. Now go back and come down the stairs like a lady." Frances retired, and after the lapse of a few minutes re-entered the parlor. "Did you hear me come down stairs this time, mamma?" "No, dear. I am glad you came down quietly. Now, don't let me ever have to tell you again not to come down noisily, for I see that you can come quietly if you will. Now, tell these ladies how you managed to come down like a lady the second time, while the first time you made so much noise." "The last time I slid down the banisters," explained Frances.—*Harper's Bazar.*

NOTES.

THE torpedo boat destroyers built by Schichau at Elbing, and already delivered to China, deserve special notice, as they have a speed of over 35 knots (35.2), and are therefore the fastest craft of the world.

THE Harlan & Hollingsworth Co., Wilmington, Del., have eleven contracts now in hand for high-classed modern tonnage. The latest order to be closed is for a steel steamer, 289 feet over all, 271 feet keel, 43 feet beam and 31 feet depth of hold, for the Metropolitan Steamship Co., New York. Her engines will be triple expansion; diameter of cylinders, 29, 46 and 76 inches by 42 inch stroke; boilers, 4 Scotch type, 14 feet in diameter by 13 feet in length and to be tested for 175 lbs. pressure. Her equipment will include seven hoisting engines, or deck winches, steam capstans forward and aft, electric light plant, etc. The boat will be built under the rules of the American Bureau of Shipping, New York and she is to be given the highest rating in the Record of American and Foreign Shipping, published by the above named universally known classification society.

THE launching of the Oceanic in January last restores Liverpool to its former position of being the home port of the largest ship in the world. It is generally understood in shipping circles that before the Oceanic makes her first trip to New York, the keel will be laid of a still larger ship, and the probabilities are that before long at least two vessels, one German and one British, both larger than the Oceanic, will be under construction. The Belfast yard, which built the Oceanic, has so many orders under way that no new contracts will be taken for completion under five or six years. The owners of the Oceanic do not make any claim to exceptional speed. Their aim, they say, has been to secure increased comfort and increased reliability as to time of arrival at port. There are those, however, who predict a surprise as to speed. The fact is not generally known that the Oceanic was largely built of American steel plates. The supplying of American plates to British shipbuilders has become a permanent trade.

THAT the advantages of the Kenney flushometer for flushing water closets and urinals on vessels generally are fast being recognized is evidenced by the wide adoption of the device in the equipment of steamships and other craft now building or recently completed. One of our contemporaries, referring in a recent number to the new side-wheel passenger steamer Pennsylvania, ready for service between Erie and Buffalo, says: "In this vessel are embodied improvements in plumbing and ventilating appliances that will make her the peer of any ship afloat from a sanitary standpoint. The entire system of plumbing is the best ever put into a vessel on the Great Lakes. Kenney flushometers are used throughout the closets. The adoption of this

device is in itself a very marked advance in ship plumbing, etc." The Kenney Company have a permanent exhibition at their principal office, 72-74 Trinity Place, New York City, showing the various applications of the Kenney flushometer, and will send illustrated catalogue to any of our readers who apply for same.

RUSSIAN ICE STEAMER.

Consul-General Holloway, of St. Petersburg, sends, under date of March 28, 1899, translation of an article from the Novoe Vremia of the 17th instant, referring to the first trip of the new 10,000-ton ice boat recently built in England for the purpose of keeping the ports of St. Petersburg and Riga open during the winter months, as follows:

The ice boat Ermak arrived at Cronstadt March 5-17. This boat was made after plans prepared by Admiral Makaroff and built in England. Owing to the fogs, it had to remain two days in Belt. Near Reval it met with very thick ice, but still continued moving at 7 knots per hour. Near Seskari it met with large fields of ice, from 9 to 10 feet high above the water line. Here the Ermak could not move on; but, with the aid of its machinery, it acquired a swinging motion, and the water running out of a special apparatus in the boat melted the ice under the vessel, which moved on dispersing the ice mountains. The ice boat presses on the ice with its prow, the screw that is under it lets out water, which softens the ice, and the movement of the screw makes the ice go under it and breaks it into rather small pieces. This ice boat has no keel and should therefore be subject to great rolling; but, in order to avoid this, there is a receptacle in the hull of the vessel, filled with water, which is arranged in such a way that the water does not allow the vessel to sway too much one side or the other, and keeps it in equilibrium.

The boat was met at Cronstadt with great triumph and music. Hundreds of people went out to meet it, running alongside of it on the ice.

The boat belongs as yet to the Ministry of Finance. It is at the same time a passenger boat, a freight boat, and a tug boat. It can accommodate nineteen first-class passengers, for which it has a fine cabin, decorated with imperial portraits, with double windows, double illuminators, and a special ventilator, which lets warm air into the cabin. The boat is lighted by electricity.

On March 31, the consul-general adds:

The new ice boat Ermak left Cronstadt on the 25th of March and opened the port of Reval, plowing through from 16 to 18 feet of ice, releasing three commercial steamers, that were frozen fast some distance from the shore. On the morning of March 27, the Ermak left Reval, clearing the way to the sea for four vessels. During the first four days of the Ermak's arrival at Russian ports, she released sixteen vessels from the ice and opened the way for them to proceed to sea.

Joseph Richard, Toledo, has purchased the old steamer Schnoor, and will take out the engines and boiler. It is not yet known what will be done with the hull, but it is old and small, built at Fairhaven in 1874; net tonnage 192, and formerly owned by Duff & Co., Sandusky.

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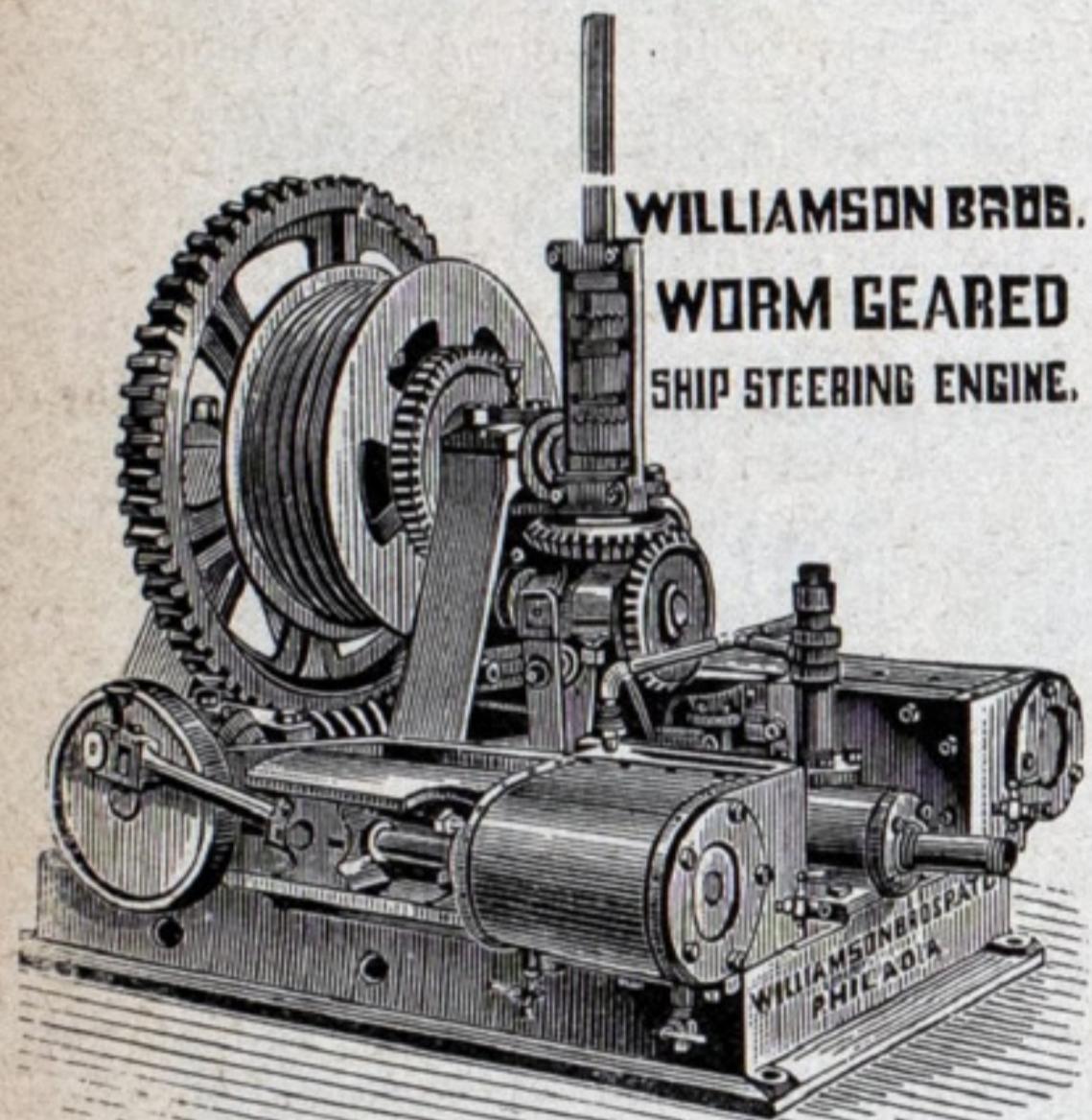
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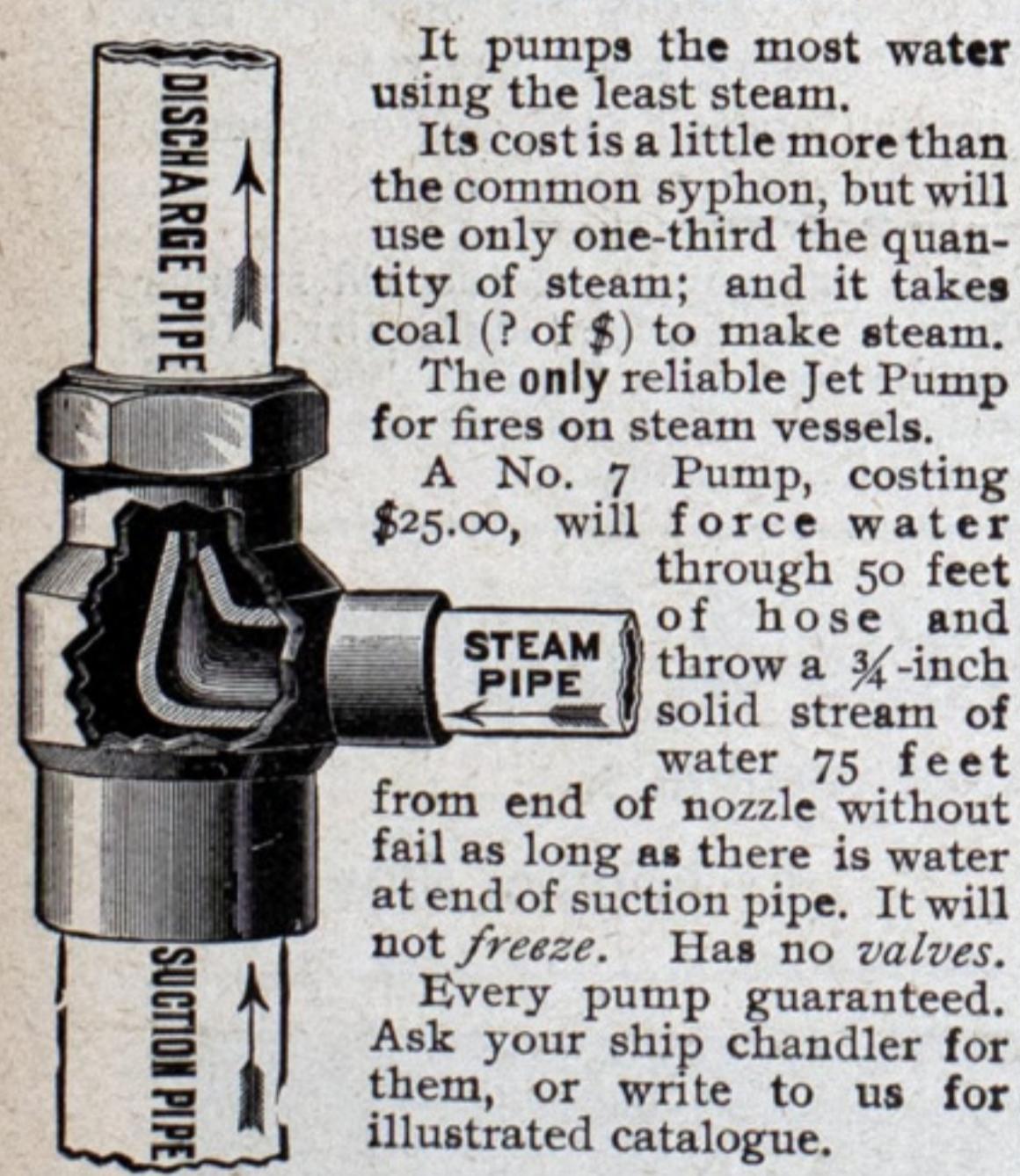


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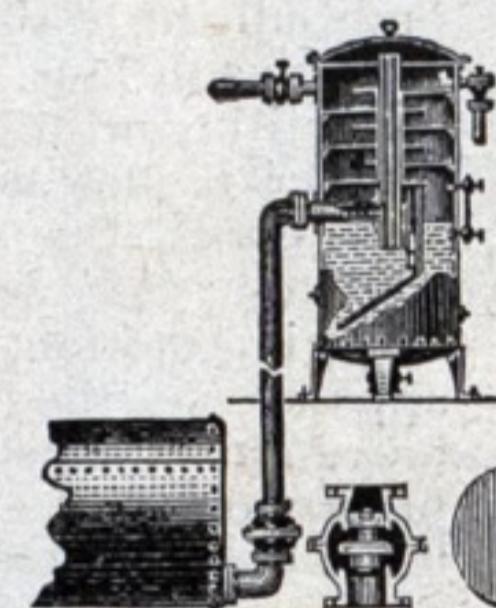
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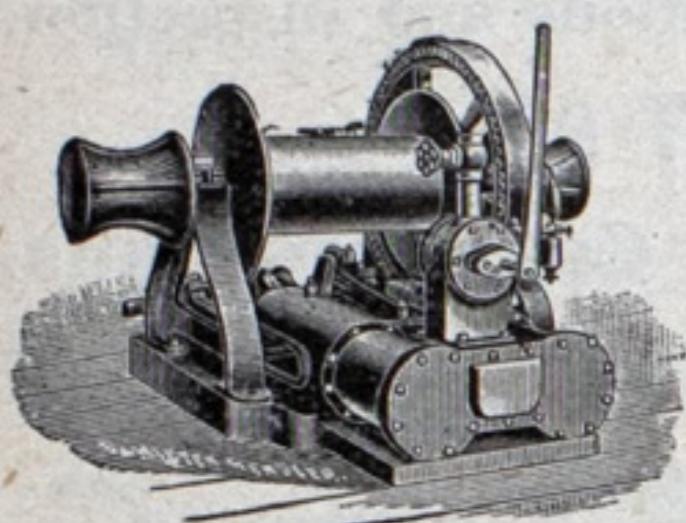
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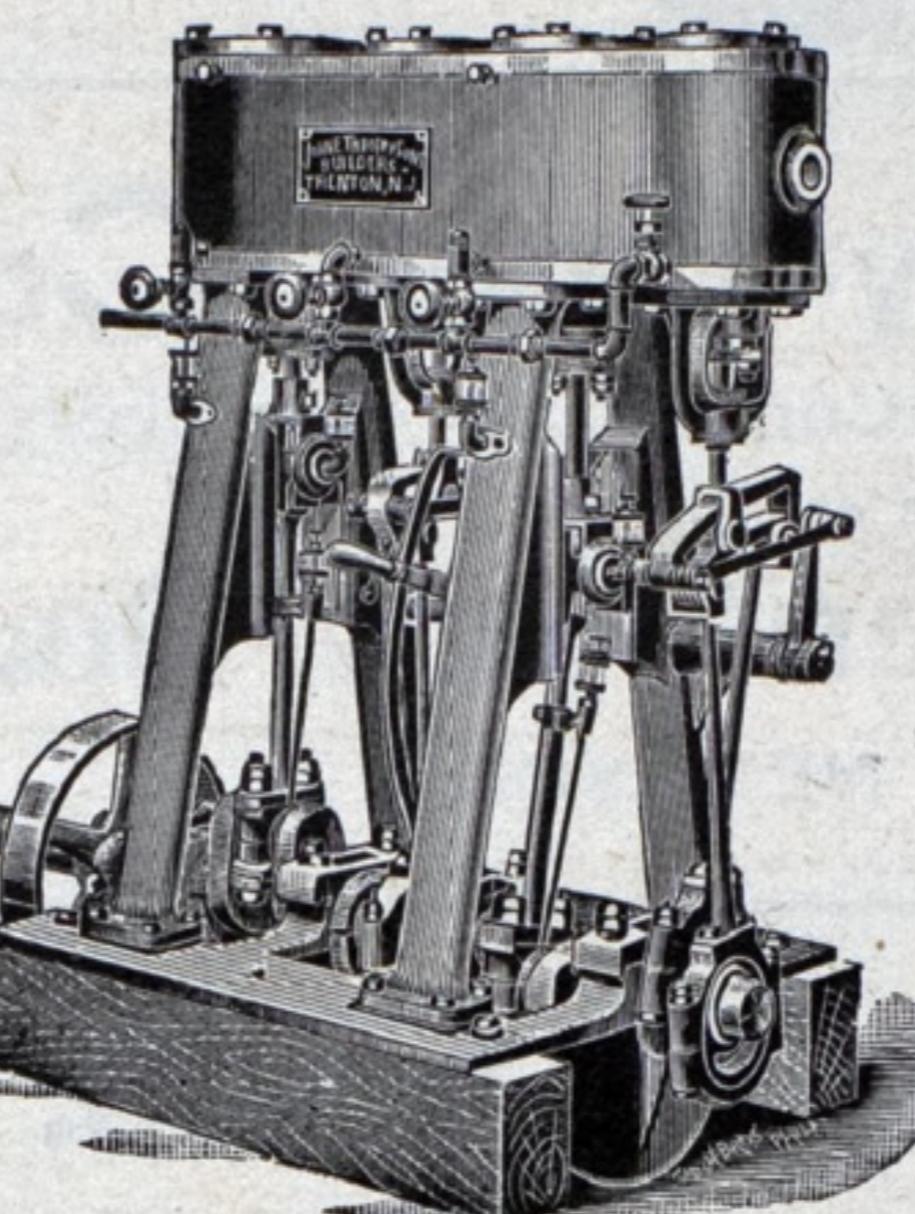
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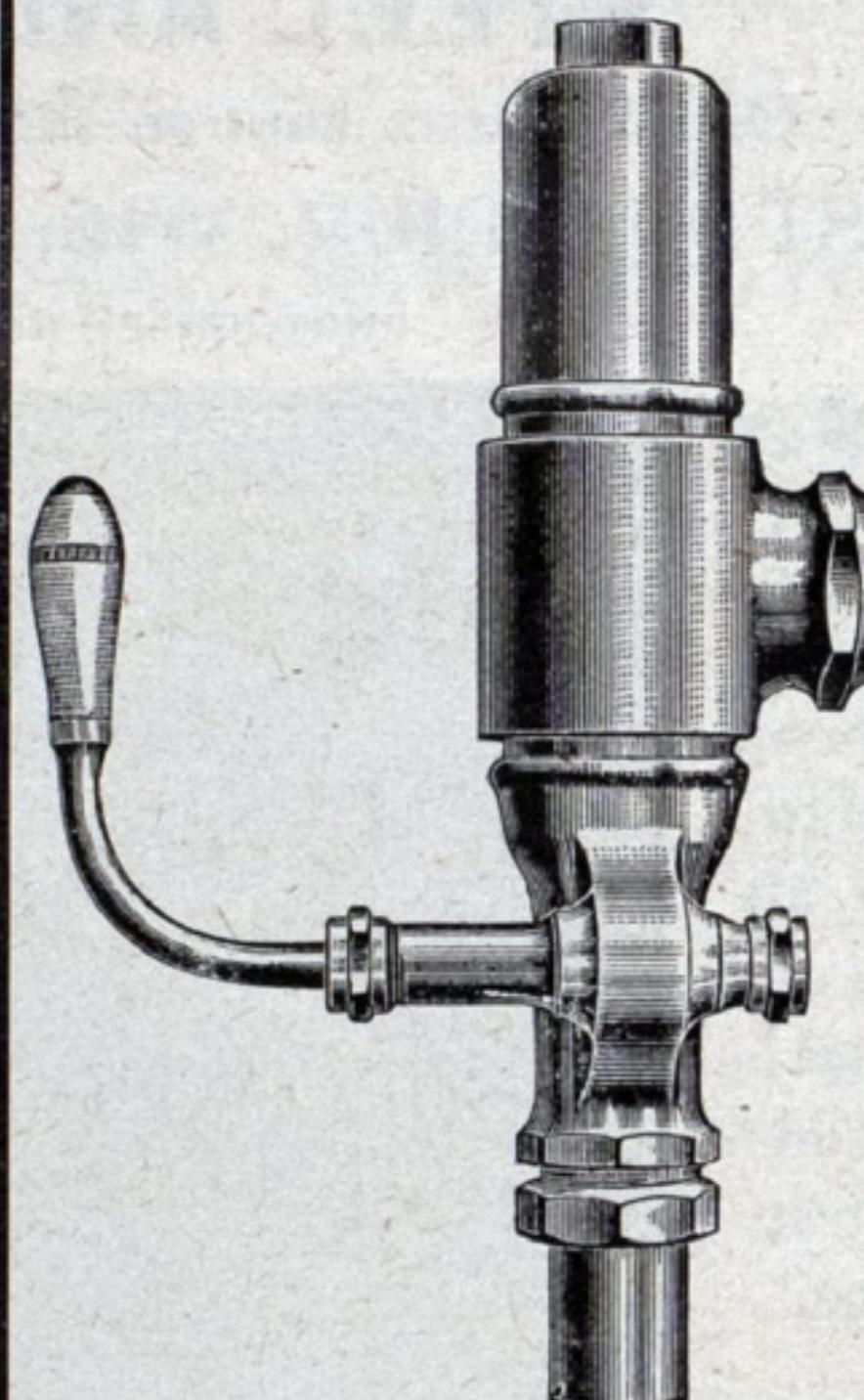
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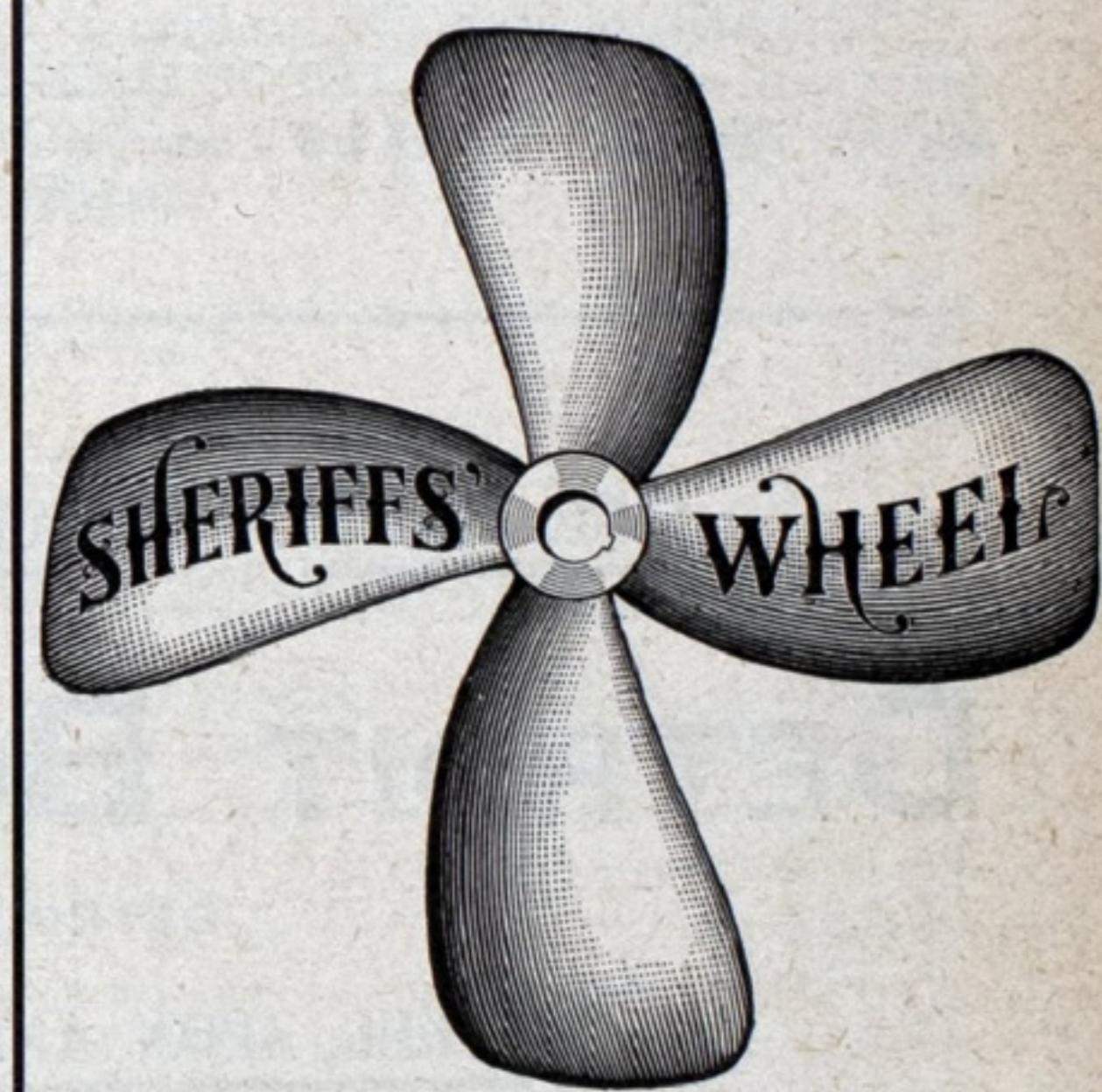
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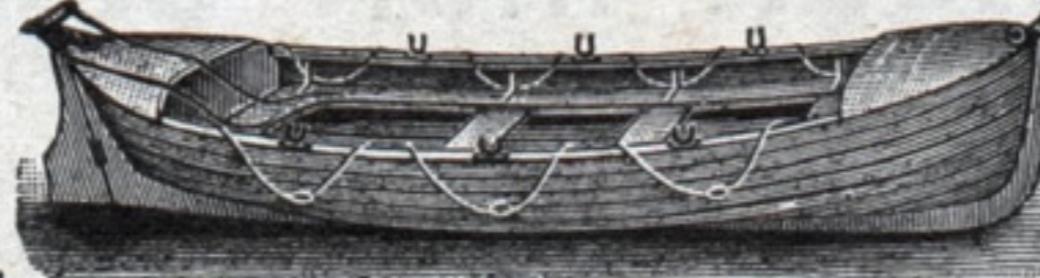
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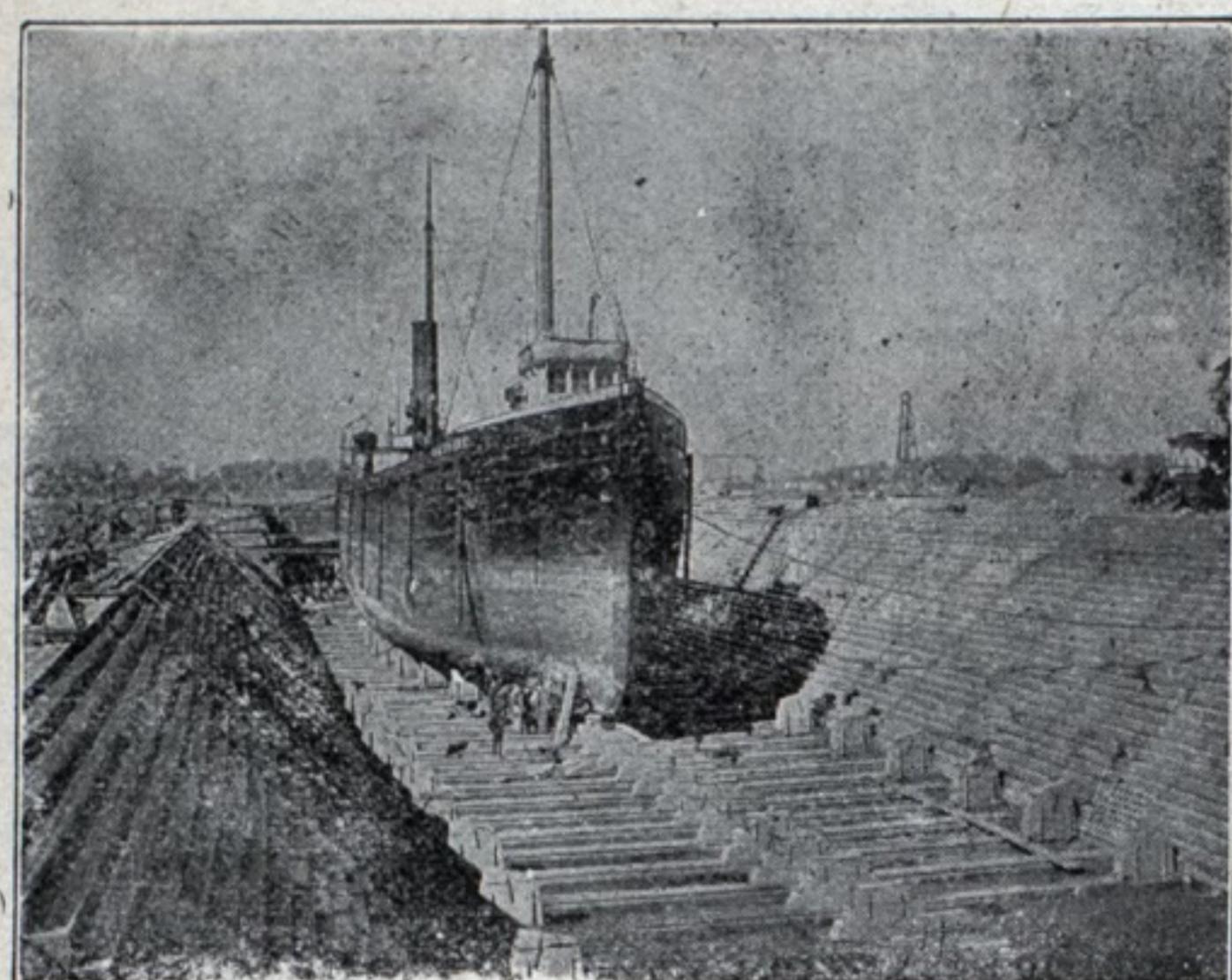
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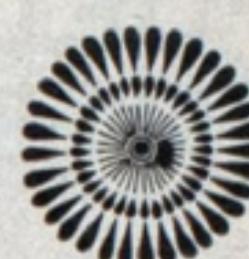
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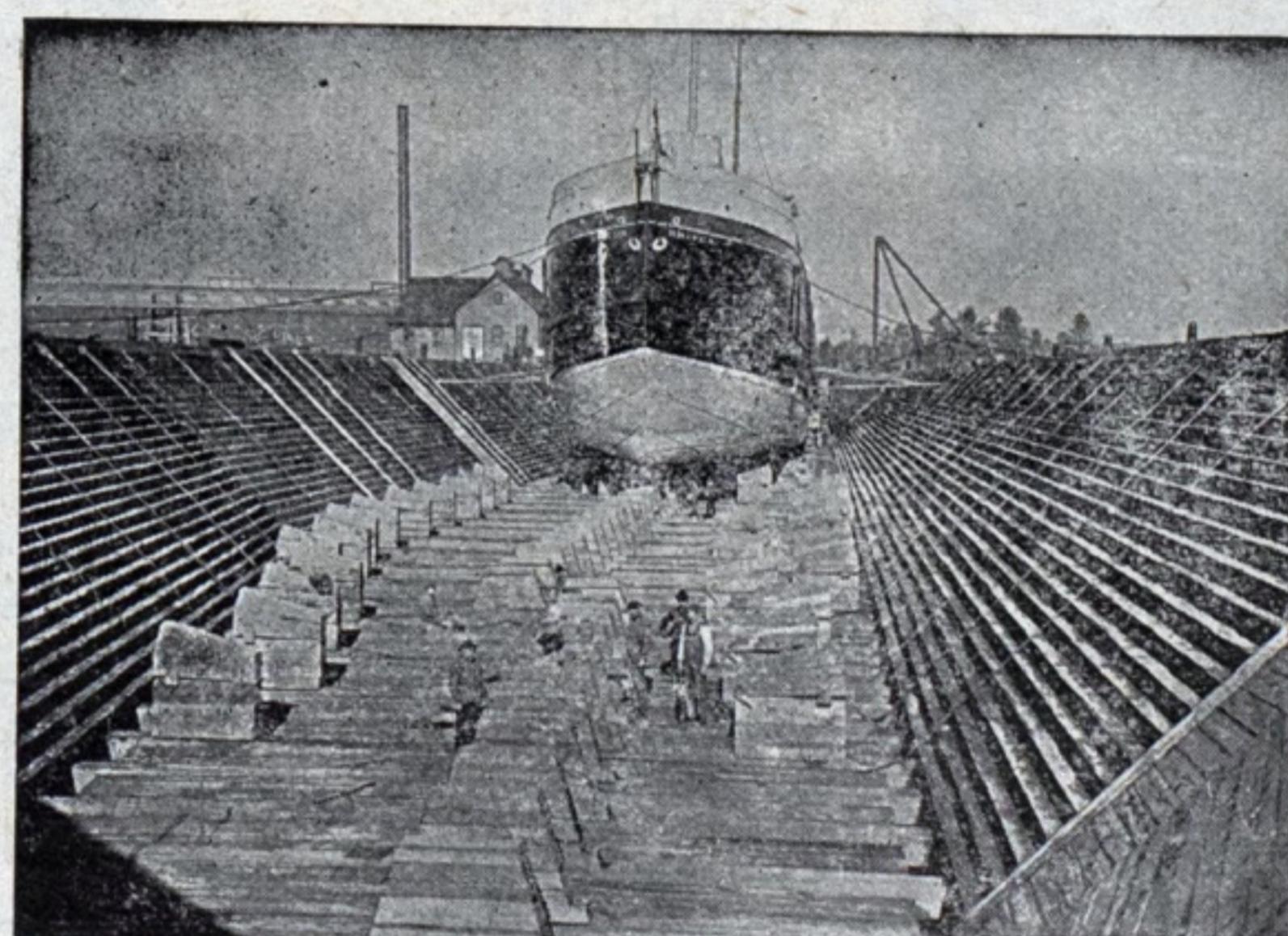
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Breadth, Top.....	90 " 4 in.	Entrance, Bottom.....	50 "
Breadth, Bottom.....	52 "	Depth over Sills.....	18 "

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